

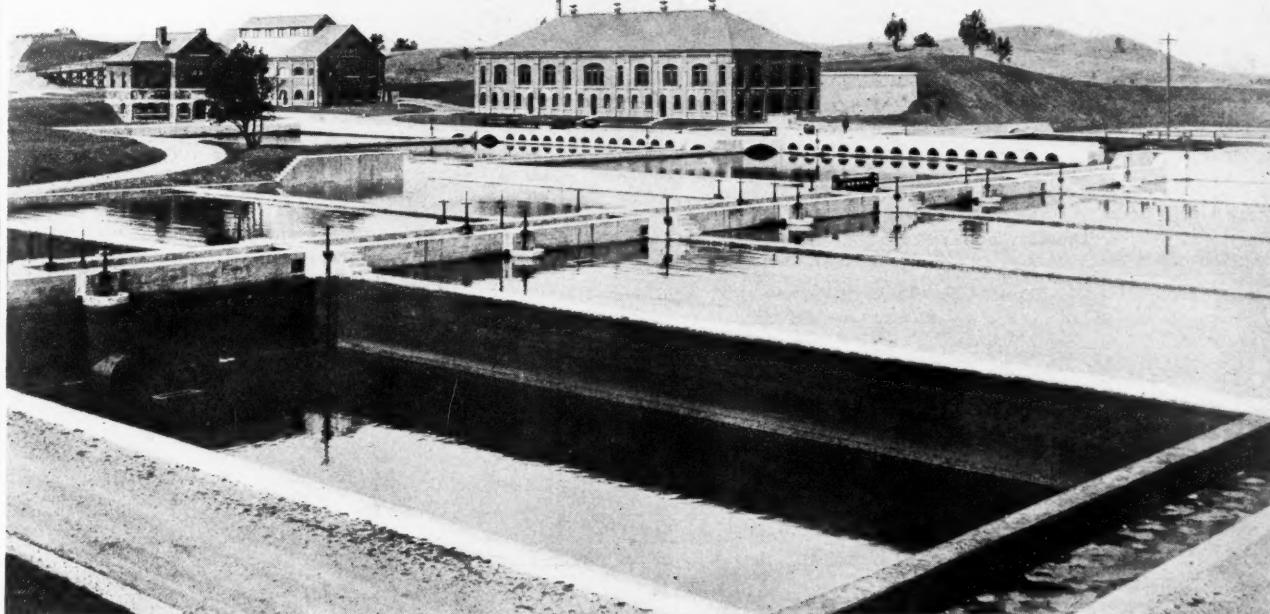
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## REPORT on SEWAGE DISPOSAL PLANTS



GENERAL VIEW OF PROVIDENCE SEWAGE PURIFICATION PLANT

THE city of Trenton, N. J., was some months ago directed by the State Sewerage Commission to take such measures as would enable it to cease polluting the Delaware River after Jan. 1, 1911. Previous to this, because of the act of Legislature which had made such action by the State Board of Health probable, a Sewerage Committee had been appointed and had organized in January, 1907, but took no active steps until the beginning of the present year. The committee, which consisted of Messrs. John O. Gretton, Francis B. Lee, Thomas B. Holmes, Charles H. Reichert and Abram Swan, Jr., has been inquiring into the subject during the past few months and appointed as its secretary Mr. A. C. Gregory, Engineer of Sewers of that city. This committee has now submitted a report which has been accepted by Council and published for distribution among the citizens, for which report Mr. Gregory is chiefly to be credited. This report is of more interest to other cities than is ordinarily the case because of its review of the present status of sewage treatment in this country. The report makes free use of various reports and writings of the Royal Sewage Com-

mission of Great Britain, of the sewer departments of several American cities, the Columbus report and other published matter of recognized reliability.

In stating the problem of sewage disposal, the report quotes from the report of Phelps and Winslow on the purification of Boston's sewage as follows:

If moist organic matter is allowed to ferment in the presence of an ample supply of oxygen, a slow oxidation is accomplished by the activity of certain micro-organisms. This aerobic fermentation is free from color, and its end is the complete conversion of the decomposition products into harmless inorganic constituents. Such an oxidation alone can finally dispose of the excretal products and prevent the obnoxious conditions attendant on an anaerobic putrefaction. *This is the rational aim of all processes of sewage disposal, which may be defined as methods for the conversion of the waste products of organic life and death into their oxidized and mineral forms.*

The italics are ours.

Disposal is classified under three heads: Dilution, clarification and purification. The first is that at present employed in Trenton, and which the city is directed to terminate by the

beginning of 1911. Clarification is defined as the removal of suspended solids in the sewage; London being cited as an illustration, 75 per cent of the suspended matter being removed from the sewage of that city (which amounts to 200 million gallons per day) and the effluent being discharged into the Thames. Under this head were considered the general methods of sedimentation, septic tanks and chemical precipitation. Attention is called to the importance and difficulty of the problem of finally disposing of the sludge, especially that derived from chemical precipitation, J. W. Alvord being quoted as saying: "The greatest single problem in sewage purification is to deal successfully with suspended matter." The committee, which visited a number of disposal plants, was particularly impressed with the elaborate and extensive arrangements found in Providence, R. I., and Worcester, Mass., for disposing of the sludge at those two plants.

Under the head of sewage purification the report discusses broad irrigation, intermittent sand filtration, contact beds and percolating filters. Concerning the first it states that "the almost universal tendency is to discard the irrigation method for others that are less costly, but give almost as satisfactory results." (Elsewhere, however, the report refers to the fact that in the semi-arid regions of the West this method has been a decided success). Credit for the extensive adoption of intermittent sand filtration is justly given to the work of the Massachusetts State Board of Health during the last twenty years. The special advantage of this over irrigation is the smaller area required. While irrigation will dispose of an average of 10,000 gallons of sewage per acre per day, intermittent filtration will dispose of 50,000 to 100,000 gallons, according to A. P. Folwell, and of 250,000 to 400,000 gallons, according to J. W. Alvord. The committee states that in the several plants visited, which were among the most efficient in the country, the rates obtained approached much more nearly the lesser figures than the larger ones.

Contact beds are credited with being able to produce a stable, non-putrescible effluent if one acre is allotted for each 600,000 to 700,000 gallons per day. The excellence of the effluent is not, however, generally as satisfactory as that obtained by sand filtration. The effluent contains considerable amounts of suspended humus matter, which, however, is non-putrescible.

Percolating filters or sprinkling filters impressed the committee as being a distinct improvement over any of the other processes described. The filters at Reading, Pa., were the only ones visited by them which used this method, but the results obtained there so impressed them that they recommended the adoption of this method of purification for Trenton.

Early in the investigation the committee requested the State Board of Health to define more exactly to what extent it would require the sewage of Trenton to be purified; whether it would be satisfied with some form of clarification which would remove most of the suspended solids, or whether the production of a non-putrescible effluent would be required. In reply, Mr. H. M. Herbert, Chief of the Division of Sewage and Water Supplies of the State Board of Health, stated that clarification would not be satisfactory, but that the Board would require a non-putrescible effluent and one reasonably free from bacteria, justifying this demand by the statement that "there are municipalities which take their water supplies from the Delaware below the Trenton outlet, and it is only just that we should insist upon a reasonable degree of purification at this point."

In making its recommendations the committee expresses itself as "being somewhat perplexed by the magnitude of the problem and the multitude of factors involved in its solution." It feels justified, however, in recommending the sprinkling filter as being more economical than any other known method for producing non-putrescible effluents. It recognizes that preliminary treatment will be necessary, for which purpose screening and sedimentation or septic treatment are suggested as probably most desirable. Chemical precipitation is eliminated because of the cost of the chemicals and of the difficulty of disposing of the sludge. Concerning the final disposal of the septic-tank sludge, it suggests that it may be possible to discharge it into the Delaware River at times of high water, as is

done at Columbus, Ohio. As an alternative, its use for filling in of low land along the river bank is suggested. It is also thought probable that the humus material which is given off from time to time from the sprinkling filters, and which in most plants is removed in settling basins, could be discharged directly into the Delaware without any ill effect. Concerning removal of bacteria the committee suggests the use of chloride of lime in the effluent, although it believes that from 80 to 95 per cent would be removed by the sprinkling filter.

Trenton is now sewered under both the separate and combined systems, the former being used in the northern part of the city and the latter in the southern part. In the latter it will be necessary to make some provision for separating storm water and house sewage, the details of which must be worked out by an engineer to be employed for this purpose. The committee finds that special investigation should be made of the following points for a final and definite solution of the problem:

1. Population to be provided for by plant.
2. The amount, bacterial and chemical characteristics of Trenton sewage.
3. The amount and composition of trade-wastes and their effect upon the sewage.
4. Amount of ground water infiltration and its elimination.
5. Changes to be made for the diversion of storm-water from the sanitary sewage.
6. Investigation of the possible effect of water meters throughout the city as a means of reducing the sewage flow.
7. Capacity, location and kind of pumps to be used.
8. Location of plant.
9. Experimentation for the determination of the most economical and effective arrangement of screens, tanks and sprinkling filters.
10. Disposition of sludge and subsequent treatment and disposition of sprinkling filter effluent.
11. Design of plant so that units may be added with growth of population.

In conclusion, the committee presents an estimate of the cost of a disposal plant, which estimate, of course, must be very roughly approximate, considering the general nature of the decision concerning the plans which has yet been arrived at. This estimate is as follows:

Pumping station, pumps, wells, etc.....	\$60,000
Screens, septic or sedimentation tanks.....	150,000
Force main from pumping station to disposal plant .....	100,000
Sprinkling filter beds, including settling basins or disinfecting tanks .....	280,000
Cost of land for site of plant, sludge disposal areas, etc.....	10,000
 Total.....	 \$600,000

It is estimated that the cost of maintenance will be about 15 cents per capita per year.

#### Disposal Plants Visited

##### PROVIDENCE

As stated above, the committee visited several sewage disposal plants, these comprising those at Reading, Pa., Providence, R. I.; Brockton, Mass.; Worcester, Mass.; Ballston Spa and Saratoga Springs, N. Y., which were visited in the order named, such visits occurring between May 3 and May 29, except Reading, which was visited March 20. The cost of these trips was \$351, which was covered by an appropriation of \$500 made by Council for this purpose.

About one-half of the report is taken up with descriptions of the several plants, and this is probably the part which would be the most interesting to others than citizens of Trenton. Two chemical precipitation plants were visited, namely those at Providence and at Worcester. The latter plant was described in our issue of Jan. 2, 1907. The Providence plant is described by the committee as follows:

The disposal works consist of a pumping plant, chemical house, precipitation tanks and sludge compressing house with sludge well and tanks and a chemical laboratory.

The sewage flows by gravity to the pumping station, where it passes through a sump and through screens for the purpose of taking out the coarser suspended matter. It is forced from the pumping station to the disposal plant, a distance of about one-

third mile, where it first flows through a channel 16 feet wide and 150 feet long. During the passage of the sewage through this channel the precipitant is added and becomes thoroughly mixed by reason of the heavy grade, and the presence of baffle plates placed so as to continually shift and turn the current. The chemical house is adjacent to the mixing channel and in it the lime is stored and prepared for its entrance into the sewage. After passing through the mixing channel the sewage enters one of the roughing tanks, of which there are four. The aim is to divide the sewage equally among the four. The purpose of the roughing tank is to receive a large part of the heavier precipitated material. The sewage leaves the roughing tanks by passing over a weir into an effluent channel, from which it enters the finishing tanks, of which there are sixteen, each one receiving about one-sixteenth of the effluent from the roughing tanks. Most of the remaining solids in suspension are by this time settled out, and the effluent is discharged through an outfall sewer into the Providence River at an elevation of 36 feet below mean high water. The sewage, after passing through the mixing channel, may be carried into any one of the four roughing tanks and from any of these into any or through a series of the sixteen finishing tanks. The arrangement of the plant is such that in times of heavy storm the sewage, instead of entering the plant at all, may be by-passed or lead directly into the river without treatment.

It was at Providence that your committee had very vividly impressed upon it the magnitude of the problem of sludge disposal as presented by sewage disposal by chemical precipitation.

The tanks are so arranged that the supernatant liquid may be drawn off and the semi-liquid sludge allowed to flow through gates into a channel leading to the sludge well and passed through screens. From the sludge well it is pumped into reservoirs in the rear of the sludge pressing house, and is allowed to settle, after which the liquid is again drawn off and sent back to the tanks. The remaining solids enter the sludge compressing house by gravity. In this place are presses very similar to the clay presses used in potteries, into which the sludge is forced and converted into "cakes," which are carried out of the building and dumped into the cars of a narrow-gauge railway maintained for that purpose.

The sludge at Providence has apparently no commercial or manurial value, and the problem is to find a way of getting rid of it.

The following information, gathered from the report of the City Engineer, 1907, will be of interest:

Population in 1907, 208,000.

Population served by sewers, about 185,000.

Length of sewerage system: Combined, 209.08 miles; storm, 10.11 miles.

Character of sewage: Manufacturing, wool washings, jewelers, dyeing and bleaching waste, with domestic sewage.

Daily flow of sewage, in gallons: Maximum, 40,462,000; minimum, 9,424,000; average for year, 19,329,000.

Pounds of lime used per million gallons of sewage treated, 653.54.

Other chemicals used: Copperas, 83.05 pounds per million gallons.

Volume of sludge produced in gallons per million gallons of sewage treated, 4,504.

Per cent of solids in wet sludge, 7.85.

Average number of gallons of sludge pumped per day, 83,660.

Hours of operation of sludge presses per day, 6.71.

Tons of sludge cake produced daily, 96.84.

Tons of solids in sludge cake produced daily, 28.2.

Cost of treatment per million gallons of sewage: Chemical precipitation, \$3.54; sludge disposal, \$3.07; total, \$6.61 per million gallons.

Annual cost of maintenance about 22.4 cents per capita.

Per cent of organic matter removed from sewage in terms of albuminoid ammonia, 44.74, and of suspended matter, 83.92.

In the analysis of sewage the amount of albuminoid ammonia found is a valuable index of the amount of organic matter present.

Intermittent sand filtration plants were visited at Worcester and Brockton, Mass., and at Saratoga, N. Y. At Worcester (see issue of Jan. 2, 1907) about sixty-one acres received an average of 79,000 gallons per acre per day during 1908. During that year 23,804 cubic yards of clogging matter were removed from these beds, or 16.2 cubic yards per million gallons of sewage filtered. The cost of cleaning the beds was about \$8,500, or \$140 per acre. The beds are prepared for winter by shaping the surface into mounds about a foot apart.

#### BROCKTON

The plant at Brockton was described in the report as follows:

The sewage disposal plant is at a distance of about four miles from the center of the city, and consists of a pumping plant and thirty-seven sand filtration beds, generally containing an area of an acre each. Brockton is unusual among American cities in the matter of water consumption. The use of water meters has brought the water consumption down to 30 to 35 gallons per capita per day. The sewage resulting from the low water consumption of Brockton is, therefore, much "stronger" than the average. The average Brockton sewage contains



FORMATION OF FILTER BED SURFACE TO SUPPORT ICE

230.8 parts solids per 100,000, and is quite in a class with European sewages.

The sewage runs by gravity to a sump (pit) passing through screens before entering the sump, and from which it is pumped to the disposal beds about three and one-quarter miles away. About 110 pounds of refuse per million gallons is screened out before the pumping. No pumping is done at night, the sewage being allowed to collect during that time, and is pumped away on the following day. A considerable amount of sediment is deposited in the sump. This is stirred up, pumped to the disposal plant, and applied to beds, of which there are five, especially used for that purpose, an average of about 136,000 gallons of sludge sewage being thus treated each day. The average amount of sewage treated per day at Brockton amounts to about 1,208,000 gallons. The minimum seems to be about 1,079,000 gallons, and the maximum about 1,433,000 gallons. This would indicate a rate of about 45,000 gallons per acre per day.

The population of Brockton is estimated at 55,000.

The above figures are for 1908. In reaching the bed from the pumping station the sewage travels 3.3 miles and is raised 42 feet.

The Brockton plant has been placed in a spot naturally lending itself to economical construction. For the most part the preparation of the beds consisted in removing the upper soil so as to leave exposed the sand and gravel beneath. Underdrains were put in only where the sand at a depth of 5 or 6 feet was too fine to allow the sewage to percolate freely through it. Where such a condition existed drains with open joints were placed about 40 feet apart. Banks were also raised and the necessary dosing arrangements made.

The disposal plant, up to Jan. 1, 1909, has cost \$337,488.64.

Seven new beds, constructed in 1907 and 1908, were completed at a cost of \$23,239.06, or at about \$3,320 per bed.

The expense for maintenance of the beds during 1908 amounted to \$6,169.04, or about \$12.53 per million gallons filtered, or 11.2 cents per capita.

Brockton is one of the few cities in this country which has received some little financial return from the manurial value of its sludge production. The sludge raking from the surface of the filters developed manurial value enough to cause it for several years to be hauled away by farmers as rapidly as it was produced. In 1900 \$125 was paid for the year's output, and in 1901 the price was raised to \$150 and stayed at that figure until 1906, when the price was removed because the farmers did not seem to think it worth the time and money. At the present time one man gets all the sludge in consideration of his removing it as fast as it is produced. The amount of sludge raking from the surface of the beds for 1908 was about 3,500 tons. The City Engineer's report for 1908 states that: "The sludge was used with corn, potatoes, millet and other grass, and each crop demonstrated its value as a fertilizer. With corn it appeared to give good results when used alone; with the other crops, better results were obtained when potash and phosphoric acid, which essentials the sludge does not contain in like proportion with nitrogen, were added."

A calculation of the average purification attained, based upon the albuminoid ammonia analysis, indicates that about 90 per cent of the organic matter is removed from the sewage. The effluent, as in the case of the other well-cared-for sand filtration plants which your committee inspected, was clear and odorless. We were informed by the City Engineer that occasionally passersby, mistaking the effluent pipes for springs, drank the water running therefrom.

#### SARATOGA

At Saratoga sand filtration is preceded by treatment in septic tanks. The plant there was described by us in the issues of April 10 to Nov. 27, 1907. The committee was particularly pleased with the Saratoga plant because of the fact that there was neither odor nor anything in evidence to suggest sewage, but the whole had a park-like appearance with grassy banks around the sand beds and septic tanks. It will be remembered that this is the plant against which suit was brought by the

Cameron Septic Tank Company. As a result of this suit the tanks are now being used as sedimentation basins, the sludge being emptied every six weeks. After leaving the septic tanks the sewage passes over an aerator, and in the neighborhood of this was the only spot where the committee was reminded by any odor of the nature of the plant, there being a slight odor of sulphuretted hydrogen at that point. The effluent from the sand filters at this plant was the clearest and most transparent that the committee found anywhere, it being impossible to distinguish it from the clearest spring water by any of the senses; in fact, each member of the committee drank a glass of the effluent. Although the filter beds were intended to operate at a rate of 60,000 gallons per day, the present rate is about 100,000. The operation of the pumps cost about \$700 per year and the maintenance of the beds during 1908 cost \$1,153.07. The total cost of maintenance per year, including all items, is approximately \$3,000.

#### BALLSTON SPA

At Ballston Spa, N. Y., septic tanks and contact beds are employed, and these are described as follows by the committee:

The sewage disposal plant at Ballston Spa, N. Y., was designed by Mr. John M. Farley, M. Am. Soc. C. E., and with him was associated Mr. George L. Robinson, Assoc. M. Am. Soc. C. E., who later read a paper describing the plant before the above-mentioned society, and from which paper we have taken certain of the information used in the description which follows:

Ballston Spa has a population of about 6,000; although, being somewhat of a summer resort, the population varies. The plant was designed to deal with an estimated flow of 1,000,000 gallons per 24 hours, about 50 per cent of which is trade waste from a tannery, paper and pulp mills.

The occasion of the design of the plant was the very serious pollution of the Kayaderossas Creek, which dumped its filth into the Saratoga Lake.

The plant consists of a pumping station, with receiving tank and force main, three septic tanks and double contact filters.

The sewage is delivered into the receiving well, whence it is pumped through a force main 2,700 feet long to the septic tanks. A by-pass at the receiving well allows the sewage to be discharged directly into the creek in case of trouble with the pumps or with the force main, and another by-pass is provided near the entrance to the septic tanks. The time of retention in the tanks it was intended to determine by experiment, and a possible range of from 8 to 24 hours was provided for.

The septic tanks at the present time are not operated strictly as such, presumably because of possible interference from the Cameron people, but rather as sedimentation basins, and the sludge is drawn off to a bed on one side and drained and probably buried or carted upon the fields. The tanks empty their effluent over weirs and it drops down upon a coke-breeze filter, which takes out any remaining coarse solids and also tends to provide some degree of aeration to the effluent before its entrance into the contact beds. There are four primary and four secondary contact beds. The contact beds are each 90 feet wide and 120 feet long, the contact material being 5½ feet deep, with its surface 6 inches below the top of the filter walls. The contact material consists of hard broken stone of a crystalline nature, and is used in 1½, 2 and 3-inch sizes. Upon the concrete floor of the filters are underdrains which carry away the filtered effluent. The sewage is applied from the septic tanks through pipes laid in the surface of the contact material, and so arranged as to reach all parts of the filter as soon as possible. The beds are intended to hold each about 130,000 gallons of sewage. This figure allows for the space taken up by contact material and by a certain amount of retained solids.

The designers of the plant, we are since informed by Mr. Robinson, intended to employ a contact period of four hours, viz., four hours filling, four hours standing and four hours emptying for both the primary and secondary beds. The beds may be operated in pairs. At the lower end of either pair of primary beds a gate-house is installed for the discharge of either or both primary beds into the secondary beds. The effluent is discharged into the Kayaderossas Creek.

Soon after the installation of the plant its management passed out of the hands of the designers, and later the village was charged by the New York State Board of Health with mismanagement of it. (*Engineering Record*, Vol. 58, page 187.)

At the time of your committee's visit the plant seemed to be working satisfactorily, judging from the effluent samples shown. A series of daily samples, extending back for a period of a month, was exhibited. The usual brownish humus sediment was present, and the more recent samples gave off a slightly earthy odor, such as one expects from contact effluents. No odor whatever occurred from the samples more than two days old. As nearly as one could judge from the evidence of eyes and nose, the effluent was non-putrescible. It has since been learned that even during the period of alleged mismanagement the analysis of the effluent showed a purification of 85 per cent of organic matter removed.

No figures are in our possession as to expense of maintenance. The management, at the time of our visit, appeared to be in the hands of one man, who not only looked after the electrically driven pumps, but the disposal works as well. Probably one man is all that is necessary for such a plant except on extraordinary occasions. The following is the cost of the plant as it appears in the accepted bid:

Septic tanks, beds, etc.....	\$39,456
Receiving tanks, pumping outfit.....	15,254
Pump house .....	3,072
Two gate houses .....	1,118
Force main (\$1.68 per foot).....	4,536
Sewer extension (\$1.41 per foot).....	1,551
Crushed stone (\$0.90 per cubic yard).....	18,000
Total.....	\$82,987

The percolating filters and other features of the Reading, Pa., plant were described in the *MUNICIPAL JOURNAL AND ENGINEER* of Nov. 6, 1907, March 18, July 22, and Dec. 9, 1908, and July 7, 1909. The tank at the present time is not used strictly as a septic tank, the sludge being emptied once in six weeks into beds where it is allowed to stand after the addition of chloride of lime. This tank is at present the most disagreeable feature of the disposal plant. Septic action does, to some extent, take place, as is attested by the malodorous atmosphere in the near vicinity of the tank. The filter purified an average of 3,000,000 gallons per day last February.

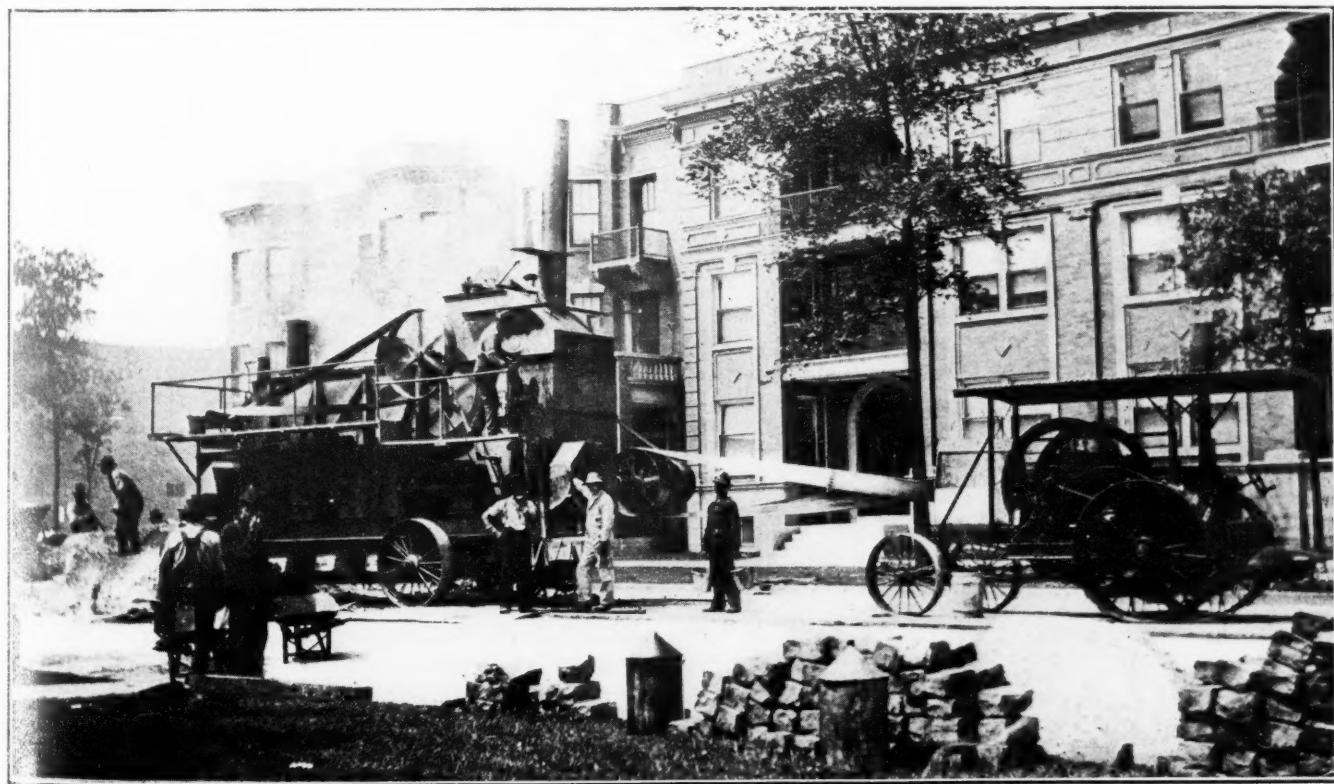
## BITUMINOUS PAVING IN CHICAGO

That Constructed Last Year Found Satisfactory—Changes in Methods Used This Year—Asphalt-Filled Manhole Covers—Cost of Work

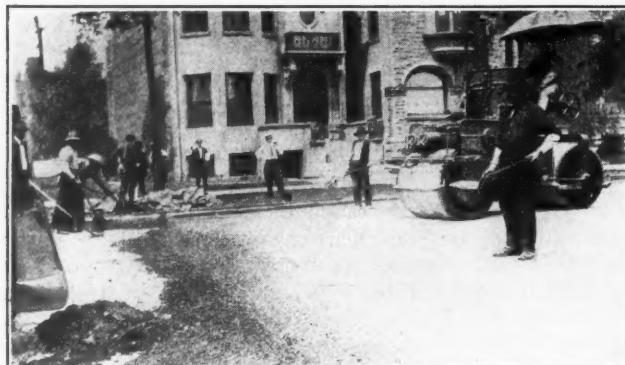
THE pavement laid last year by the South Park Commission of Chicago called mineral rubber paving, described by us in the issue of Oct. 21, 1908, has apparently proved satisfactory. In May, 1908, Grand Boulevard between 44th and 45th streets was surfaced with a  $\frac{1}{8}$ -inch coating of mineral rubber paving. An inspection of this stretch made on June 29 of the present year, after the pavement had seen a year's service under the extremes of summer heat and winter cold, showed it to be in excellent condition. It was firm but resilient. Caulk marks showed but the pavement had not been torn by the caulk; and no creeping, rutting or weather checking was visible. The stability of the pavement was further indicated by the presence, still clearly defined, of marks due to construction, such as those made by the edge of the roller in turning.

The same kind of pavement is now being used in resurfacing Michigan avenue from 39th street southward to 55th street, a distance of about two miles. In the work this year, however, some changes have been made in the method of handling and laying the material. In preparing the street for surfacing a twelve-ton roller is used to spike up the surface, after which the necessary amount of loose stone is added to bring it to grade and the road is thoroughly rolled. In this rolling, however, not as much care is taken as would be the case with a finished macadam street, as a slight roughness of the surface or even a few loose stones help to enable the surface material to bond with this base.

The bituminous surface material is mixed on the street in two portable machines similar to those described in the October 21st issue, but with some improvements suggested by last year's experience. Each machine has a capacity of 800 or 900 square yards of 2-inch surface per day. The material forming the aggregate is delivered in piles near the machines and is taken to the rear of the feed hoppers in barrows, where it is slightly mixed before being fed to the machine. The asphalt is usually cut in large pieces and placed on the curb near the



BITUMINOUS MIXING PLANT. FEED AT LEFT, DELIVERY AT RIGHT

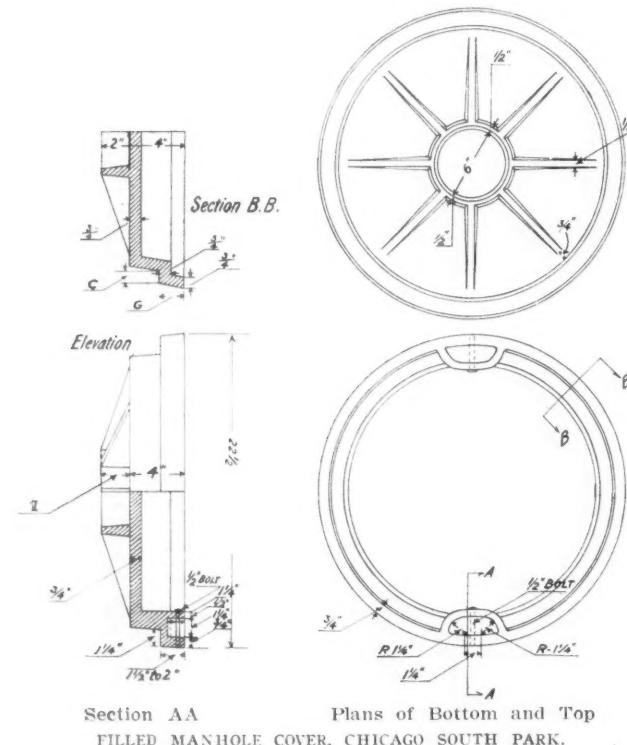


SPREADING SCREENINGS ON ASPHALTIC CONCRETE BEFORE ROLLING

machine convenient for handling. The mixture consists of 60 per cent of crushed limestone from  $\frac{3}{4}$  inch down, with the dust removed, 20 per cent of torpedo sand and 20 per cent fine sand. This is mixed with 8.8 per cent of asphalt. The mixture leaves the machine at a temperature of  $275^{\circ}$  F. and is received in metal barrows, which are painted with oil each trip to prevent sticking.

These barrows carry it to the point where it is to be used and where it is spread on the street to such a thickness that, when thoroughly compressed, it will make a 2-inch wearing surface. After the hot material is spread and before it is rolled a coat of  $\frac{1}{4}$ -inch screenings is spread over it. This serves incidentally to prevent sticking to the roller, but its most important function is to furnish a gritty finished surface, much of it being forced into the asphaltic concrete. On some of the work the asphaltic concrete has been rolled first and then painted with asphaltic cement before spreading the screenings; but apparently no better results are obtained and the expense is increased. When the pavement is first used much of this screening coat is loosened and can be easily removed, leaving a gritty surface which affords a good footing for horses. When the pavement is first finished the white screenings create a very unpleasant glare; but as these are forced into the asphalt or else loosened and removed, the surface takes on a darker shade which is not objectionable.

In laying this pavement considerable care is taken to obtain a good bond between the paving and the curb; the latter being painted to the paving line with asphaltic cement and the paving material forced firmly against it by means of hot rammers.



FILLED MANHOLE COVER, CHICAGO SOUTH PARK.

There is being used on this work a manhole cover which contains a depressed center filled with the paving material. These filled covers cause very much less noise to be made by the vehicles passing over them than do the ordinary iron covers. The details of this cover are shown in the illustration.

Mr. Linn White, engineer of the South Park Commission, figures that the cost of the 2-inch wearing surface described above is less than 75 cents per square yard; this including all material and labor and the ordinary up-keep of the machines; also the preparation of the old macadam surface, which in the case of Michigan avenue amounted to very little. If a complete new pavement were to be laid on a 6-inch macadam base the cost would be about \$1.35 per square yard, using the ordinary estimate of 10 cents per square yard for every inch in thickness of the macadam.

In addition to the work of this kind now under way, the South Park Board has recently let a contract for paving with the same material Michigan avenue from 12th street north. This stretch is being widened from its present width of 50 feet to 75 feet between curbs. The specifications call for a 6-inch concrete base, no binder and a 2-inch wearing surface of the above described asphaltic concrete. The contract was let to the Metropolitan Engineering and Construction Company at \$1.73 per square yard of completed pavement.

#### BATTLE CREEK WATER WORKS

THE water works of Battle Creek, Mich., now about 22 years old, were constructed and are operated by the city's Board of Public Works. The source of supply is Goguac Lake, which has an area of 360 acres and a watershed of  $1\frac{1}{2}$  square miles. Part of the year, however, the lake is fed from Minges Brook, which has a drainage area of 14 square miles. From this lake the water is pumped by two Blake compound, duplex, condensing steam pumps, each of  $2\frac{1}{2}$  million gallons daily capacity. These pump to a stand pipe 18 feet in diameter and 75 feet high, the top of which is 200 feet above the business part of the city and about 100 feet above the lake. During the 22 years of operation there has been practically no change in the plant, both the pump and boiler now in use having been the ones originally purchased. The diverting of Minges Brook into Goguac Lake, however, was carried out some years after the original construction at a cost of about \$20,000. This method of increasing the supply was, however, contemplated in the original plan.

The company now has in use 4,115 meters, being 90 per cent of the number of taps. Sixty-six per cent of the water indicated by the pump counter is paid for by meter rates (averaging 10.7 cents per 1,000 gallons) and only 4 per cent of that paid for is not metered. Of the remaining 30 per cent, 4 per cent is estimated to be leakage, 4 per cent slip of pumps, 3 per cent under-registration of meters, and the other 19 per cent free use for municipal purposes. (We would be very much surprised if careful investigation did not disclose more than 4 per cent of slip in pumps 22 years old; and 4 per cent of leakage from the mains is much less than has been found in a great many cities.) There are 534 fire hydrants, five public park fountains, eight public drinking fountains for horses and seven for people. The average consumption per day per capita is 61 gallons, and per tap 385 gallons. The distribution system contains 51.8 miles on which there are 440 street valves, or about one to every 600 feet. The average cost of services, carried to the curb, during 1908 was \$11.25. The average cost for pumping was 0.39 cents per 1,000 gallons, the average dynamic head pumped against being 120 feet. The average cost for pumping 1,000 gallons, including all operating expenses and interest at 4 per cent on the total construction cost was 5.4 cents per 1,000 gallons in 1908, this being 1.3 cents less than in 1907 and 1906.

Of the mains, 56 per cent are 6-in,  $27\frac{1}{4}$  per cent are 8-inch,  $6\frac{1}{2}$  per cent are 12-inch, and  $4\frac{1}{4}$  per cent are 16-inch. Less than 6 per cent of the distribution system is 4-inch pipe; an exceptionally good showing, especially for a system as old as this. During 1908 the total actual income was \$49,562, and if allowance be made for the fire hydrants at \$40 each and for the

water furnished to public buildings, fountains, flushing sewers, etc., which is estimated to have a value of \$6,000, the total is \$76,922. The operating expenses for the year were \$16,352; 4 per cent on the total cost would be \$17,400, and 5 per cent depreciation on the total cost would be \$21,751, a total of \$55,503. This shows a net profit of \$21,419. The actual difference between income and operating expenses was more than \$33,000.

The meter rates range from 6 to 13 cents per 1,000 gallons, with a minimum annual rate of \$3. Meters are either sold at cost or rented at an annual charge of 10 per cent of cost, except  $\frac{5}{8}$ -inch meters, which rent for 10 cents per month, and  $\frac{3}{4}$ -inch for 12 cents per month. Superintendent W. W. Brighden, to whom we are indebted for this information, states that the people approve of the meter system almost unanimously.

#### NEWARK'S MUNICIPAL LIGHT PLANT

THE city of Newark, N. J., has a small municipal electric light plant located in the City Hall, which building is lighted by it. A few weeks ago the plant was examined and reported upon by Duncan & Lyndon, of New York, who stated that, although the cost of generating electricity by this plant was about one-half cent less than the 5 cents per kw-hour asked by the Public Service Corporation, it was still unnecessarily high. The labor costs, they said, were excessive, and the generating machinery larger than required for the service. They believed that the cost could be reduced appreciably by either of two remedies, in each of which, however, the working force would be reduced to four men working in two shifts. This would require shutting down the plant from 12 o'clock midnight to 6 a. m., as during this period the cost of lighting is more than twice the normal figure. The use of a storage battery for the lessened amount of lighting during these hours was recommended. At present the force employed on the heating and lighting plants consists of one electrical engineer at \$1,800, three engine men at \$1,200, three stokers at \$1,000, and one oiler and wiper at \$900: the salaries of these men, which work in three shifts, being \$9,300. Of this about \$4,000 should be charged against the lighting plant. Of the coal used they estimate that 1,000 tons should be charged against the lighting plant. Interest they figure at \$1,500, depreciation at \$1,150, repairs and maintenance at \$600, and lamp renewals cost \$1,364. The total kw-hour per year is about 278,000. They estimate that a storage battery which, with accessories, could be installed for \$3,800 would effect a saving of \$3,200 per year. As an alternative to this, current might be purchased from a private company during the hours from 12 to 6 for little more than one-third the cost of operating the plant during that time. Operated in this way, and charging against the electric light plant one-half of the labor employed on it and on the heating and ventilating plant they estimate that the cost per kw-hour would be 3.16 cents when using a storage battery, which would be increased to 3.49 cents if current be purchased.

#### SIOUX CITY'S PUMPS FLOODED

DURING a flood some weeks ago a comparatively new pump of the Sioux City, Ia., Water Works plant, located at the Main street pumping station, and which cost \$50,000, was covered with about 10 feet of mud and 30 feet of water, and so remained for several days. Meantime there was considerable danger of a shortage of water, which would have been fatal had a fire occurred. As soon as possible the water and mud were removed from around the engine and it was given a preliminary cleaning. As the empty condition of the reservoir seemed to constitute an emergency, the pump was started as soon as this was practicable, although there was still a little grit in some of the bearings. In spite of its having been encased in mud, it appeared to have escaped injury and continued working without accident until it had filled the reservoir and safeguarded the city against immediate trouble from that source. As soon as this had been accomplished the bearings and other parts not immediately accessible were cleaned out.

#### INTERNATIONAL LIGHT UNIT

Recommended for Adoption in United States by Department of Commerce and Labor; Also in France and Great Britain—Ratio of International Candle to Other Units

MR. S. W. STRATTON, of the Department of Commerce and Labor, has issued the following Bulletin relative to a proposed adoption of an International Standard Unit of Light. The same announcement is being made in Great Britain by the Director of the National Physical Laboratory and in France by the Director of the Laboratoire Central d'Electricité:

In order to determine as accurately as possible the relations between the photometric units of America, France, Germany and Great Britain, comparisons have been made at different times during the past few years between the unit of light maintained at the Bureau of Standards, Washington; at the Laboratoire Central d'Electricité, Paris; at the Physikalisch-Technische Reichsanstalt, Berlin, and at the National Physical Laboratory, London.

The unit of light at the Bureau of Standards has been maintained through the medium of a series of incandescent electric lamps, the values of which were originally intended to be in agreement with the British unit, being made 100-88 times the Hefner unit.

The unit of light at the Laboratoire Central is the bougie décimale, which is the twentieth part of the standard defined by the International Conference on Units of 1884, and which is taken, in accordance with the experiments of Viole, as 0.104 of the Carcel lamp

The unit of light at the Physikalisch-Technische Reichsanstalt is that given by the Hefner lamp burning at normal barometric pressure (76 cm.) in an atmosphere containing 8.8 liters of water vapor per cubic meter.

The unit of light at the National Physical Laboratory is that given by the 10-candlepower Harcourt pentane lamp burning at normal barometric pressure (76 cm.) in an atmosphere containing 8 liters of water vapor per cubic meter.

In addition to the comparisons of electric and flame standards carried out recently by the national laboratories in Europe, one comparison was made in 1906, and two in 1908 between the American and European units by means of carefully seasoned carbon-filament electric standards, and as a result of all the comparisons the following relationships are established between the above units:

The pentane unit has the same value within the errors of experiment as the bougie décimale. It is 1.6 per cent less than the standard candle of the United States of America, and 11 per cent greater than the Hefner unit.

In order to come into agreement with Great Britain and France, the Bureau of Standards of America proposed to reduce its standard candle by 1.6 per cent, provided that France and Great Britain would unite with America in maintaining the common value constant, and with the approval of other countries would call it the International candle. The National Physical Laboratory, London, and the Laboratoire Central d'Electricité, Paris, have agreed to adopt this proposal in respect to the photometric standardization which they undertake, and the date agreed upon for the adoption of the common unit and the change of unit in America was April 1, 1909.

The following simple relations will therefore hold after that date:

- 1 International Candle = 1 Pentane Candle.
- 1 International Candle = 1 Bougie Décimale.
- 1 International Candle = 1 American Candle.
- 1 International Candle = 1.11 Hefner Units.
- 1 International Candle = 0.104 Carcel Unit.
- Therefore 1 Hefner Unit = 0.90 International Candle.

The pentane and other photometric standards in use in America will hereafter be standardized by the Bureau of Standards in terms of the new unit. This, within the limits of experimental error, will bring the photometric units for both gas and electrical industries in America and Great Britain and for the electrical industry in France to a single value, and the Hefner unit will be in the simple ratio of 9-10 to the international candle.

The proposal to call the common unit of light to be maintained jointly by the national standardizing laboratories of America, France and Great Britain the "International Candle" has been submitted to the International Electrotechnical Commission, which will endeavor to secure the indorsement of the proposal by all countries of the world which are represented on that Commission.

It is hoped that such general approval may be secured, and that in the near future the term "International Candle" will receive general sanction.

For many years the British Parliamentary candle was the unit generally employed in this country, but the loss of precision did not permit its value to be very accurately expressed or reproduced. The Bureau of Standards, while adopting the above unit of light, will continue to standardize flame standards by electric standards as heretofore. It is probable that the Hefner lamp will not be superseded as a convenient flame standard, at least for some time to come. These standards for electric lamps and gas flame lamps seem to be the best yet found available, and as the relations between these and the International Candle have been accurately determined as set forth above, their use is in no wise interfered with by the adoption of the international unit.

### NEWTON'S WAR ON GYPSY MOTHS

Forestry Department Established—More Efficient in Extermination Than Private Contractors—Tree Spraying Appliances—Burlap Trees

IN the city of Newton, Mass., the sum of \$200,000 will be spent this year in an effort to exterminate the gypsy moths. The damage done by these insects first became a serious matter in 1907, and in 1908 the Street Department found it impossible to handle the problem as it had previously done, and a Forestry Department was established. Mr. C. I. Bucknam, who had gained a high reputation as forester in the adjoining town of Somerville, where he had reduced the cost of moth extermination from \$60,000 to \$3,000 annually, was appointed Forest Commissioner. A thorough campaign was determined upon, and during the winter of 1908-1909 a force of about 130 men was employed in hunting egg-masses and painting them with creosote. The burning of these egg-masses, at least in out-door

fires, was not favored as there is always a possibility that some of the eggs may be blown away before the heat destroys them. There are available for the work of moth extermination sums of money from four sources. Out of its annual appropriation of \$400,000 for the destruction of insect pests, the United States Government assigned \$25,000 for the work in Newton, which appropriation is spent under the general direction of the Forester, who assigns certain streets for the work to be done with Government funds. The State of Massachusetts set aside \$25,000 for the Newton campaign, and the city itself provided \$50,000 in its budget. In addition, individual property owners will furnish \$100,000 for cleaning out the moths on their private estates, part of which work will be done by contractors, but most of it by the Forestry Department, which has been found to be more efficient. Contractors have no vital interests in thoroughly cleaning out the estates, and if a few moths are left alive a job is provided for the next year; but the Forester's reputation and future success depend upon his exterminating the moths. The cost of the work done for property owners is kept separate and is charged up to them on the annual tax bills.

Following the winter work of applying creosote to the egg masses came that of spraying trees in the spring and early summer with arsenic preparations. The city owns several portable outfits consisting of a gasoline engine, a force pump and a tank containing the poisonous mixture. The pumps used are manufactured by the W. R. Douglass Company, Springfield, Mass., and the engines used are marine motors made by the Irisbie-Heft Motor Company, Middletown, Conn. When engaged in spraying trees along the street an apparatus of this sort, drawn by two horses and operated by three men, will cover four miles a day. In spraying woodlands for private owners the cost is \$10 per acre, including arsenic preparation and labor. In this latter work a large amount of hose is carried with the outfit, and if necessary the work of spraying can be carried on a distance of 1,500 feet from the wagon. In near work no extension appliance of any kind for elevating the nozzle is necessary as the engine is powerful enough to throw the spray to the top of the highest tree.

The third process in the campaign consisted in burlapping the trees. Some property owners use "Tanglefoot," a sticky preparation painted on the tree in a ring where the bark has been previously smoothed off. This process is considered by the Forester to be less effective than girdling with burlap, and is open to the objection that when used on trees in public highways a person may rub some of the sticky stuff onto his clothes and have cause for action for damages against the city. The burlapping process depends for its success on the nomadic habits of the gypsy moth. At night or when the weather is cool the caterpillars ascend the trees to feed on the foliage. The heat of midday drives them down. No matter which way they go when they come to the burlap they crawl under it and hide. A forester every day visits each tree provided with a girdle, and, armed with a short-handled wire broom, quickly brings the career of the caterpillars to a close. This year the city forces are taking care of one-half of the private grounds in the city and they inspect the work of the contractors in practically all of the remainder.

Two hundred thousand dollars is a large amount for a city of 35,000 inhabitants to spend for an extraordinary purpose, and if there were no relief in sight and this operation were to be a permanent one, the value of the residential property would greatly depreciate. Such is not the case, however; Mr. Bucknam expects to reduce the cost of moth extermination yearly until a minimum of \$10,000 is reached in two or three years, after which the work will be merely that of inspection to kill stray moths brought in from other places. That this condition may be reached is shown from the results of the work already done in the Waban and Chestnut Hill sections of the city. Last year in these places every property owner without exception turned his premises over to the care of the Forester, with the result that they are absolutely free from moths this year and the work there has been reduced to that of inspection only.



SPRAYING TREES IN NEWTON

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## AND ENGINEER

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A. PRESCOTT FOLWELL, Editor  
J. H. DONNELLY, F. E. PUFFER, Assistant Editors  
F. S. SLY, Field Editor

### Business Department

H. M. SWETLAND, President  
J. T. MORRIS, Treasurer M. J. SWETLAND, Secretary  
G. E. SLY, Advertising Manager  
S. W. HUME, Western Representative, 1664 Monadnock Block,  
Chicago

Telephone, 2046 Bryant, New York  
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It is also desired that the facilities furnished by the reference library in this office should be widely known and freely used by those interested in municipal affairs. Visitors will be welcomed and provided with conveniences for search, and inquiries by mail will be promptly dealt with.

AUGUST 25, 1909.

### CONTENTS

Report on Sewage Disposal Plants (Illustrated).....	285
Bituminous Paving in Chicago (Illustrated).....	289
Battle Creek Water Works.....	290
Newark's Municipal Light Plant.....	291
Sioux City's Pumps Flooded.....	291
International Light Unit.....	291
Newton's War on Gypsy Moths (Illustrated).....	292
Non-Expert Reports .....	293
Anti-Graft Discussion .....	293
Garbage Removal Monopolies. By John Simpson.....	294
Anti-Graft Discussion.....	295
Fire and Police Alarm Systems.....	295
News of the Municipalities (Illustrated).....	296
Legal News—A Summary and Notes of Recent Decisions...	303
News of the Societies.....	304
Trade Notes .....	306
Municipal Appliances (Illustrated).....	307
The Week's Contract News.....	308
Incorporations .....	321
Personals .....	322
Patent Claims (Illustrated).....	322

### Non-Expert Reports

The report concerning sewage disposal abstracted in another part of this issue is an excellent one of its kind, and the committee and its secretary are to be commended for carrying out their instructions so intelligently. And yet the question arises as to whether another procedure would not have been preferable.

In fact, the question has been raised, Mr. Herbert, engineer to the State Board of Health, being quoted as saying: "I advised the committee that the first thing necessary to do was to employ a first-class sanitary engineer to study the question thoroughly and report to the city authorities, with recommendations as to the best method for the treatment of the sewage. I also told the committee that if they would devote the \$500, which had been appropriated by the city, towards the payment of an engineer for the above purpose, it would in all probability pay a large proportion of the cost of such preliminary report and estimates; that the committee would gain nothing by visiting the different plants, although it might probably prove entertaining and a pleasure."

The sole results of this expenditure are, apparently, the report and the familiarity with disposal plants gained by the members of the committee. The former could have been prepared by an experienced sanitary engineer, or probably by the secretary of the committee, from published reports and textbooks—in fact, most of it was obtained from these sources. At the most, a trip by the secretary alone, who was an engineer in the city's Department of Sewers, would have sufficed for the purpose. But it remains a question in what way such report is of value to the city. That a committee of non-experts found conditions in one plant more to their liking than in any of half a dozen others is not a good reason for copying that plant regardless of the similarity or dissimilarity of local conditions to those in the various cities visited. And it would appear that the information possessed concerning the Trenton sewers and sewage was too meager to furnish even to an expert a basis for such comparison.

As to the information gained by the committee, this would, perhaps, have been worth the cost if the members were to continue in charge of the preparation of plans and of construction; but we understand that the committee was discharged, and the city will probably derive no further profit from their knowledge.

The above is not intended as a reflection on the committee. On the other hand, their itemized bill of expenses indicates that their visits to these plants were made at as little expense as was feasible, and, as stated above, they deserve praise for the conscientious and intelligent way in which they carried out their instructions. But the general idea is wrong. It might be defensible if it were a case of selecting a general design for a city hall or other building; but this should be a case of selection based, not upon esthetic or other preferences, but upon scientific reasons founded upon thorough knowledge of local conditions and the present "state of the art." And we do not learn that either a selection so made or any final intelligent action of the city has been advanced by the preparation of this report; in fact, such action has been delayed by failure to place the matter at once in the hands of an expert.

Trenton is by no means the only city which has taken similar action, else we should not have written the above; but we desire to call attention to the general fruitlessness of sending committees of non-experts to examine sewerage systems, pavements, garbage disposal plants and the like. It is not to be expected that they can obtain more than a very partial knowledge of the subject in this way, and too often this "little knowledge" proves the old adage to be true.

### Anti-Graft Discussion

We are glad to present on another page a beginning of discussion of the anti-graft editorial printed last week. We sincerely hope that the matter will be taken up seriously and that this will be followed by further discussion which may lead to definite action.

The writer of this letter is inclined to take a more pessimistic view of the matter than we are prepared to. It may be that in three-fourths of the incinerator lettings *some one* makes graft insinuations; but he may often be a mere ward heeler or other political hanger-on who acts entirely unknown to any one having authority or influence in the matter. We know of one recent case where the bid of a certain firm was refused consideration by council because they had learned that this firm had offered graft in a neighboring city. And we believe many others would take similar action, given the same information.

What we propose is, in part, such action as the above but taken *before* the letting—a straightforward announcement that if any knowledge of grafting on the part of any bidder reaches council, such bidder will be refused consideration.

Mr. Morse says that action in this matter must come naturally from the city. But we hope it will come from the contractors, for action by a given number of firms would, we believe, bring an end to grafting more quickly than by an equal number of cities.

## GARBAGE REMOVAL MONOPOLIES

Power of Municipalities to Grant These to Private Parties or  
City Scavengers—Denied by Courts in Some  
States, Affirmed in Others

By JOHN SIMPSON

It is not unusual for state legislatures by express provision to grant to a city, in its charter or otherwise, power to make contracts with individuals, for a number of years and under certain prescribed conditions, for the removal of garbage from the city; and, although sometimes contested on the ground of its granting a monopoly to an individual or a limited number of individuals, such provisions, when reasonable, have almost invariably been held to be constitutional. In several cases it has been held that a municipality has power, without express legislative sanction and under its general police power, to pass such reasonable ordinances as may be necessary for the disposal of its refuse and contracts made thereunder with individuals have generally been held valid though in the nature of a monopoly. (Grand Rapids v. De Vries, 123 Mich. 570.) So, where the charter of a city gave it full power to regulate business of every kind that might endanger the public safety, health and comfort, an ordinance in pursuance thereof was held to have the same force and effect within the city limits as laws passed by the legislature. (In re Zhizhuzza, 147 Cal. 328.)

The question of the validity of such ordinances has been before the United States Supreme Court, where an ordinance granting an exclusive right and privilege, for the period of fifty years, to cremate the garbage of the city of San Francisco at a proper designated place and to charge a reasonable sum for the collection thereof was held not to be void as taking the property of householders for public use without compensation. Even if some of the substance destroyed at the crematory had a value for certain purposes, the authorities were held not bound, before removal, to separate those that were confessedly worthless from those which might be utilized. (California Reduction Co. v. Sanitary Reduction Works, 199 U. S. 306.) In a similar case (Gardiner v. Michigan, 199 U. S. 325) the court said that if the owner of the garbage removed suffers any loss by its destruction, he is compensated therefor in the common benefit secured by the regulation requiring all garbage to be destroyed.

The State courts have in many cases ruled that when authorized by legislature, or where essential for the public health, a municipality may contract with a single person to collect and remove garbage from the entire city without creating a monopoly. (City of Grand Rapids v. De Vries, 123 Mich. 570; State v. Orr, 68 Conn. 110; Walker v. Johnson, 140 Ind. 591; State v. Robb, 100 Me., 180; State v. Paysan, 47 La. Ann. 1029; Coombs v. MacDonald, 43 Neb. 632.) Nor does the creation of the office of city scavenger, or a provision or by-law that no other person than the city scavenger shall do scavenger work for the citizens without procuring a license and paying a license fee, create a monopoly. (City of Varay v. Corson, 14 Col. App. 345; Re Vandine, 6 Pick [Mass.] 187.) In Atlantic City v. Abbott, 73 N. J. L. 281, the court said that in order to finally dispose of garbage in such a way that the public authorities may be assured that it will be innocuous they may adopt any reasonable plan of disposition, provided they act in good faith and not in an arbitrary manner. A city ordinance passed in good faith which limits the use of the public streets for the collection and disposition of garbage to the duly authorized contractor of the city is valid as an exercise of police power. It has also been held that the notices of a municipal corporation in passing such an ordinance cannot be enquired into for the purpose of determining its validity; and in a prosecution for violating an ordinance evidence offered to show that the purpose of the authorities in passing it was fraudulent and to create a monopoly of the garbage business in the hands of one contractor, was excluded. (People v. Gardner, 143 Mich., 104.) The reason given for the decision in the case of city of Grand Rapids v. De Vries, that the subject matter of the ordinance,

viz., the collection of garbage, is not a trade or occupation, may be open to question, and is expressly disapproved in Iler v. Koss, 64 Neb. 710.

The legislative grant of power to remove garbage has been held to carry with it the power to the board to fix a price for its removal. The provision in an ordinance that the removal of garbage shall be at the expense of the property holder is within the police power, although it is an extreme exercise of it. If it be also provided that the householder may, if he chooses, destroy all his garbage on his own premises, such a provision does not invalidate the ordinance as constituting an assessment on the premises (Walker v. Johnson, 140 Ind. 591).

The power to grant such monopolies, must, it has been held, be confined to the end which is to be attained, namely, the prevention of nuisances which would menace the comfort and health of the inhabitants; and a city was denied the power to grant, by a police regulation, a monopoly to one individual, by contract, to enter upon the private premises of the inhabitants, and at their expense collect and remove those innoxious substances, such as ashes, cinders, stable manure, or other substances not in themselves nuisances, but which if allowed to accumulate in unreasonable quantities, would become such, or which might be utilized for some beneficial purpose. (Iler v. Ross, 64 Neb. 710.)

The Kansas court has declared against ordinances giving exclusive privileges as creating monopolies. A municipal ordinance making it the duty of the Mayor of a city, with the consent of the council, to appoint two or more suitable persons to act as city scavengers, and making it unlawful for any person to engage in the business of a scavenger without a license, the ordinance being adopted under legislative power to the city "to compel and regulate the removal of garbage and filth beyond the limits of the city" has been held invalid as providing for a monopoly. (Matter of Lowe, 54 Kan., 757.) It is to be noted, however, that there is in the bill of rights in the constitution of the State of Kansas, which prohibits the legislature from delegating the power to a city to grant to any individual the special privilege of carrying on any ordinary business or calling.

In four recent cases from other states, the ordinances, the validity of which was involved, presented features which constrained the courts to hold them unreasonable and unconstitutional. The city of Chicago last year passed an ordinance providing for the institution of a number of stations at convenient points for the reception and shipping of manure from the city, and authorizing the taking of bids for the exclusive privilege of establishing and maintaining such stations and shipping manure therefrom, saving to the owners of domestic animals the right to remove the manure accumulating on their own premises. In a suit for an injunction against the enforcement of the ordinance, it appeared that the complainant had been engaged for seven years in the business of shipping manure from the city, and the carrying out of the ordinance would have destroyed his avocation and compelled him to violate his contracts. The Illinois court held that, while the city might, under its general power to make regulations for the promotion of health and the prevention of disease, require the prompt removal of manure, regulate the conduct of the business, prescribe penalties for the infraction of reasonable rules and regulations, require a license of persons proposing to engage in the business, and compel them to give security for the observance of city ordinances and regulations, it had no power to grant the exclusive privilege of engaging in the business to one person who has bid for the privilege, which was the granting of a monopoly having no legitimate relation to the purpose to be accomplished by the ordinance. The court distinguished the cases where the grant of such a monopoly had been sustained as being cases where the ordinances were expressly authorized by the charter of the city or the monopoly was essential to accomplish the intended purpose, while here the question was whether an ordinance granting an exclusive privilege to some contractor who would pay for it, with the effect of destroying the complainant's legitimate business, was reasonable. The court held that it was not. (Landberg v. City of Chicago, 237 Ill., 112.)

The Arkansas Supreme Court, while conceding that a city has the power to provide by proper ordinance regulations requiring the removal at suitable intervals of the deposits from unsewered privies, and to grant the exclusive right to one or a limited number of persons to do the work for a rate of compensation to be fixed by the city, and to be paid by the owner or occupant of the premises, held unreasonable and invalid ordinances providing for the letting of such contracts to the highest bidder, since it was obvious the ordinances and contracts were solely or partly for the purpose of raising revenue, and the city could not for such a purpose become a sharer of the profits arising from the exclusive privilege granted. (Dreyfus v. Boone [Ark.], 114 S. W., 718.)

In Bauer v. Casey (26 Ohio C. C., 598) the question hinged upon the definition of the word "garbage." The ordinance provided that nobody except the city contractor or its agents should transport through the streets garbage, etc., and provided that "the word 'garbage' shall be held to include all refuse of animal and vegetable matter which had been used for food for man, and all refuse animal and vegetable matter which was intended to be so used, and includes condemned food." It was held that the inclusion of condemned food rendered the ordinance unconstitutional, because, "although condemned by the inspector, it still remains the property of the owner, and has a commercial value for purposes other than food; and being still the property of the owner, he has the right to make such disposition of it as he may see fit, provided it does not affect the public health or welfare."

In Buffalo Fertilizer Co. v. Town of Cheektowaga (113 N. Y. Supp., 901) it was held that while the proper town board has undoubted power to prescribe by reasonable regulations the mode of transporting garbage over its highways, and to impose penalties for the violation of such regulations, an ordinance prohibiting the transportation of garbage over the town streets without the written consent of its commissioner of highways, and declaring a penalty for so doing, is an illegal attempt to license, and as the ordinance prescribed no terms or conditions on which a consent or license should be given, it was void as giving the commissioner of highways arbitrary power in the matter.

#### ANTI-GRAFTING DISCUSSION

New York, Aug. 21, 1909.

The Editor of the Municipal Journal,

New York.

Dear Sir: Your editorial in the issue of August 18th upon the Anti-grafting Association is a very admirable presentation of a subject of great interest to all contractors and engineers having to deal with municipalities in every line of work.

You say: "Directly and indirectly, graft is perhaps the greatest curse suffered to-day by American municipalities." This is a well-established fact, one perhaps not to be admitted by either party concerned, nor one to be mentioned in connection with the contracting work of any class, but still a fact that is perfectly true and to be taken into consideration in almost every instance where municipal contracts are concerned. It is especially true with regard to waste disposal work. A long experience in contracting for municipalities has led the writer to believe that in more than three-fourths of the number of cases where contracts are asked for or offered for waste disposal there has been a direct or indirect offer to sell to the proposed contractor "influence" in the way of securing a contract for a cash return to be paid therefor.

In a great number of cases, when the subject is first broached, there is an intimation from some source connected with the city authorities that something is to be "paid for the boys." It is clearly understood that these gentlemen are not in the business for their health, nor do they get very much return from the city in the way of salary for their work, and they expect to receive a consideration from the various contractors to reimburse them for the time and labor spent in political work.

It has reached a point in some cases where it is impossible to get any consideration, no matter how good a proposition may be presented from a business point of view, unless an allowance is made for "promotion" and a cash consideration to be paid to some party who is perfectly well known to represent the city authorities.

On the other hand, there are also cases where the contractor begins his negotiations with a direct offer for a cash payment provided he is granted a contract favorable to himself and to his apparatus.

Any one bidding on strictly business grounds and presenting a thoroughly well designed apparatus guaranteed to do the work required, and fortified by bonds, is at a disadvantage when coming in competition with those who offer graft. The results are that the apparatus which the city really should employ is put aside in favor of some other form or system which is accepted at a higher cost, and which is not, judging from past records, the one best suited for the purposes of the city.

A system of graft has been going on in this disposal work for the last fifteen years. The results are that among many of the companies and contractors there is a spirit of distrust, and a feeling that no matter what may be offered it will not be accepted without a bribe be attached thereto. When brought into competition with this method of obtaining contracts by graft, reliable and responsible companies and contractors feel as though it is useless to offer to construct or install plants that will do satisfactory work and sometimes refuse to bid, declining to offer proposals because they are almost certain to be thrown out in favor of a competitor who offers, or who will accept an offer, to put aside a certain proportion or percentage for the benefit of interested parties on the municipal side.

These facts are perfectly true, they are well known, and yet it would be very difficult to secure evidence which would in court convict any briber or any receiver of graft. The remedy for this state of affairs seems to be one which is very difficult to be established. Your proposal of an organization of "Anti-Grafters" is the first instance where, to the writer's knowledge, a combination of this kind has ever been proposed, and it is one which should receive the hearty commendation and support of those who are anxious to do business on a square business basis without reference to graft or to influence paid for, directly or indirectly.

Your intimation that it should cover every branch of contractors connected with the municipality and also those municipal authorities who are willing to subscribe to such an organization would seem to be wide enough to cover all the cases. You propose to organize an association to include both contractors and councilmen. It is not easy to see exactly how this can be done in advance of any particular instance where a contract for any class of work is proposed. To make up such a general organization would require a very large amount of preliminary work and a bureau with a staff organized for the express purpose of maintaining such a league. It would be difficult and disheartening work at first, but if there was a sufficient amount of money subscribed and put into the hands of trustworthy persons to administer, undoubtedly such a combination could be maintained.

To speak more definitely with regard to disposal work, the writer would suggest that there might be this method adopted. When a town or city is contemplating the installation of a disposal plant of any kind and has made up its mind to proceed in the regular business way, when the announcements are made that bids are to be called for, the city authorities may then couple with their advertisement an intimation of the fact that contractors would be required to subscribe to and pledge themselves to abstain from all graft overtures on both sides and to reveal any information to authorities where such measures are proposed.

This might be applied wherever, in the estimation of the city authorities, it was needed. This would not require any more machinery than simply the consent of the contractors and the initiative would come from the city authorities to whom it properly belongs. In the event that any contractor would be unwilling to make such a pledge it would be only proper that his offer for contracting work should not be considered, as the suspicion that would attach to his refusal would rightfully put him out of the field.

The writer believes that your idea would have the support and co-operation of every honest corporation or firm engaged in the work, who would be willing to give a pledge and would observe it for the benefit not only of themselves, but for all who are concerned in stamping out this blight upon the municipal record of this country.

Yours very truly,

W. F. MORSE.

#### FIRE AND POLICE ALARM SYSTEMS

CENSUS BULLETIN 102, now in press, gives statistics concerning fire and police alarm systems in the United States in 1907, from which the following figures are taken: The total number of such systems was 1,157, using 70,812 miles of single wire and 62,504 signaling boxes. Of these systems 48 were for both fire and police, 931 for fire only and 178 for police only. Electric fire-alarm systems were in use in 36 of the 38 cities of more than 100,000 population; in 39 of the 40 cities of 50,000 to 100,000 population; in 79 of the 82 of between 25,000 and 50,000, and in 245 of the 281 of from 10,000 to 25,000.

## NEWS OF THE MUNICIPALITIES

**Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance**

## ROADS AND PAVEMENTS

## Good Sidewalk Record

Arkadelphia, Ark.—Concrete sidewalks are being put down on all the principal streets, both in the business and residence districts. All brick walks are being taken out and replaced with concrete. Arkadelphia claims to have more concrete walks than any city of its size in the State.

## Railroads Help and Hinder Road Making

Baltimore, Md.—The movement for good roads in Maryland has been seriously handicapped in some sections by the imposition of high rates by railroads for transporting material.

New Orleans, La.—In response to a plea from Governor Sanders, the New Orleans & Great Northern Railroad has offered to haul road materials free. Other railroads are expected to follow the example and haul material free or at reduced rates.

Dallas, Tex.—Road building and street paving will be made more expensive by the enforcement of the "granite" rate as applying to crushed stone. This rate nearly doubles the former freight charge.

## Says Boston Needs to Spend \$30,000,000 on Streets

Boston, Mass.—At a hearing of the Street Commissioners, given upon a petition for laying out and constructing Opera place from Huntington avenue to St. Stephen street, Col. Eben D. Jordan expressed the opinion that the city needed to spend \$30,000,000 in the next few years for street improvements, \$10,000,000 of it immediately. The land for the proposed street, regarding which the hearing was held, was offered to the city at half of its assessed value. The Boston Opera House, to which the new street will lead, was referred to as a public institution of great credit and value to the city and a means of increasing assessable values; hence, the city, it was argued, was justified in buying the land at its fair valuation and constructing the street.

## Massachusetts Highway Work

Boston, Mass.—Before 1912 the State Highway Commission anticipates that it will have completed the North Shore road from Boston to Newburyport and Salisbury, although it is not expecting to complete all the trunk lines of highway proposed, radiating out from Boston to different points on the State boundaries until that year, or even until 1915. Thus far some 800 miles of State highway are included in the general scheme, counting those roads that are finished and those which are only contemplated through routes which as yet are unimproved. When finished the entire work will represent an expenditure of approximately \$7,000,000 by the State in road reconstruction.

## Municipal Plant to Lay Pavement Invented by Mayor

San Antonio, Tex.—The buildings for the municipal paving plant have been completed and the machinery is being installed. The plant covers a city block and has a siding leading to it from the Southern Pacific Railroad. The plant will turn out asphalt mixture and also material for the "Callaghan pavement" invented by Mayor Callaghan. This is composed of finely broken limestone, to which is added a small quantity of fine sand and asphaltic petroleum residue as a binder. Patches of this material laid in local thoroughfares have given satisfaction, and it may be possible to improve by this process much of the 91 miles of macadamized roads in the city.

## Might Accept Inferior Foundation at Reduced Price

Walla Walla, Wash.—The contractor for the paving of North Second street, with the consent of the city authorities, laid the concrete foundation, using gravel instead of crushed stone. Stone costs \$2 per load, gravel 90 cents. Some of the property owners wish to have the concrete relaid in accordance with the specifications. Others would be willing to accept the base if a rebate equal to the difference in cost is made in their assessments.

## Storm Floods Five Hundred Basements in Chicago

Chicago, Ill.—The record-breaking inundation in downtown basements following the storm, August 13, recalled to the minds of city officials the recommendations of Orlando H. Cheney, for many years head of the Sewer Department, following the fire of 1871. At that time Mr. Cheney recommended that the street grades be raised about 10 feet, making them 15 feet above the lake level. He wanted to have the millions of tons of debris used to raise the streets. City officials were intent on rebuilding the city and were afraid of having a humpbacked downtown district. They figured that a few feet raise in the grade would suffice. After the recent storm the Fire Department received 500 calls to pump out cellars.

## Brick Highways Near Jacksonville

Jacksonville, Fla.—That more of the highways in the county will be paved with vitrified brick at an early date is evidenced by an action of the Board of County Commissioners in regular weekly session, when a set of resolutions instructing the engineer to prepare plans and advertise for bids for the necessary filling, curbing, grading and laying of one mile of this material on each the Pablo Beach and Kings roads was adopted. The County Commissioners experimented for the first time with brick as a paving material for county highways some months ago, when a stretch of one mile was laid on the Lem Turner road. The durability of the brick was thoroughly tested, and the Commissioners have determined to lay more of the material. The cost of it is, of course, greater, but when the superior durability is considered the expense is discounted.

## Ohio County Will Oil All Roads

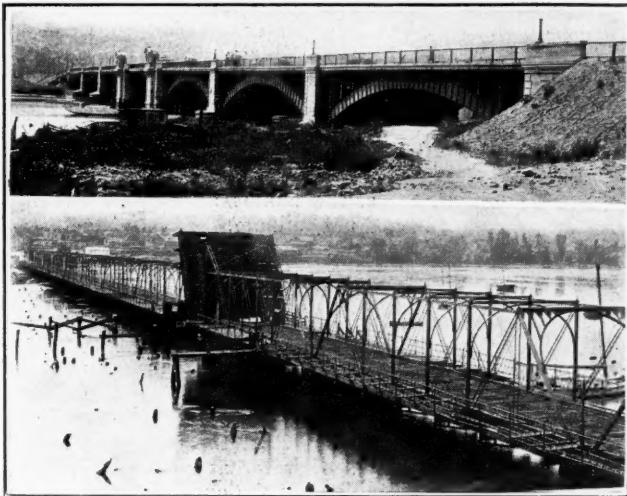
Lima, O.—So successful have been the tests made of crude oil treatment of streets and roads in this section that Cleveland and local capitalists have organized a company to prosecute the work through northwestern Ohio. C. H. Doebler, of Cleveland, is general manager. The recent oiling of 10 miles in Shawnee Township has converted the road into a veritable boulevard. Shawnee's Trustees expect to regrade and resurface every pike in the township and treat it with crude oil.

## Highway Commission for Alabama

Montgomery, Ala.—Senator John W. Overton has introduced a bill in the Alabama Senate to create a Highway Commission, providing for an experienced Commissioner to be appointed by the Governor for a term of four years, an assistant, who must be a civil engineer, and a clerk. It will be the duty of the Commission to gather and tabulate information and statistics on road building, maintenance and improvements. At the request of local road authorities the Commissioner will have plans and specifications prepared for improving the roads with such materials as may be agreed upon. The Commissioner will have general charge of the construction and repair of the main travel roads of the State. The professors of civil engineering in the University of Alabama and the Polytechnic Institute may be called in consultation.

## State Aid for Main Village Streets

Utica, N. Y.—The villages of New Hartford, Whitesboro and Yorkville will be the first villages in Oneida County to receive aid from the State in building their main village street. Whitesboro is planning to take time by the forelock and secure a plan of treatment for their street, which, at the westerly end of the village, is 100 feet from fence to fence, so as to make the approach to Utica the handsomest entrance the city has. It is expected that the tracks of the street car company will be moved to the center of the street; that the State will join with the village authorities in paying for an ample width of highway, with proper curbing, and that the lawns will be brought from the sidewalks past the row of ancient trees to the road curbing, making a handsome and impressive street.



Courtesy Washington Star

OLD AND NEW ANACOSTIA BRIDGES.

#### Old Anacostia Bridge to Be Demolished

Washington, D. C.—The contract for demolishing the old Anacostia bridge which is replaced with a new concrete steel structure has been let. The old bridge, built in 1875, was intended for vehicular traffic, and later sidewalks were added. With the introduction of electric cars the danger of overloading the bridge was so great that special regulations were necessary and the number of passengers in each car was limited. The floor of the new bridge is 22 feet higher than the old bridge, thus avoiding interruption to traffic through frequent opening of the draw and avoiding two grade-crossings with railroads. The new draw can be operated by electricity in two minutes or less. When the plans for improving the Potomac are carried out there will be a clear channel between abutments.

#### Promoting Improved Roads at County Fairs

Columbus, O.—W. E. Maxwell, Secretary of the Good Roads Association of Ohio, has spent several days in Columbus completing arrangements for the exhibit of the society at the State Fair. Mr. Maxwell states that exhibits will be made at more than 60 county fairs in the State, but the greatest exhibit by far ever made of modern road-making machinery will be that at the State Fair. The scheme proposed is to have a big parade on the first day of the State Fair, with all makes and models of road-making machinery in the line. The best speakers in the country on modern road-making will be present, and representatives from different granges and good roads societies from every part of the State will be invited to attend the event.

### SEWERAGE AND SANITATION

#### National Rivers Purification Commission Suggested

Augusta, Me.—A national movement for the protection of streams from pollution by sewage and manufacturing waste is to be started by Governor Fernald of Maine. This organization follows the lead of the National Conservation Commission and will work along lines similar to those laid down by Gifford Pinchot, the Government's expert. It is expected that New Hampshire, Vermont, Massachusetts and Rhode Island will shortly imitate the example set by Maine.

#### Milk Dealers Boycott City Applying Tuberculin Test

Lorain, O.—The milk dealers have put in effect their threatened boycott as a result of the enforcement of the Council's severe milk regulations requiring that milk shall come from tuberculin-tested cows. Milk received by the dealers from farmers supplying it under contract was dumped into sewers by the milkmen. Empty milk wagons made their route only to explain that there would be no milk. In order to give relief to the babies who are accustomed to being fed milk, Mayor King directed that owners of cows living within the city be permitted to sell milk to their neighbors without obtaining the city license.

#### Draining Mosquito Breeding Marshes

Lynn, Mass.—The Lynn Health Board has put men at work digging trenches on the flats in the vicinity of the gas house for the purpose of draining pools that have been breeding places for mosquitos. The trenches are dug in parallel lines with other parallel trenches at right angles to them, and they are now filled with clear running water at high tide. The trenches are 30 inches deep and 10 inches wide.

#### Cave-in Interrupts Gas, Water and Telephone Service

Peoria, Ill.—A cave-in on the North Peoria sewer, recently constructed, put the gas, water and telephone service out of commission in a large section of the residence portion of the city. A section of pavement, 20 feet across, sunk about five feet. With the breaking of the water main, water ran into the gas pipes. The theory is that quicksand pumped out of the sewer trench left an open pocket above the brick sewer.

#### Applying Tuberculin Tests Under Police Protection

Louisville, Ky.—In company with two county patrolmen, to keep the peace, the Health Officers are prosecuting the tests of the dairy cattle of the county for tuberculosis. The county patrolmen have been appointed by the acting judge of the County Court, Magistrate Edward Meglemry, whose action stands out against that of Mayor Grinstead, who withdrew two of the city's patrolmen from the service. The members of the Dairymen's Protective Association are still talking resistance to the campaign. Dr. F. T. Eisenman, State Veterinarian, said: "Despite the opposition of the city administration and the dairymen, ignorant of the first principles of hygiene and health in cattle, we are going to test the cattle furnishing milk to the citizens of Louisville, and prevent the dairymen who have diseased cattle from selling milk in the city."

#### Clarion River to Be Cleansed

Harrisburg, Pa.—The Fish Commission has undertaken to purify the Clarion River, which it considers to be the worst polluted stream in the State. Commissioner Mecham states that every living organism has been killed in the Clarion River, even to the microscopic growth that affords food for fish, and that the waters are thick and sluggish with the wastes from industrial plants.

#### Public Drinking Cups Prohibited in Schools

Topeka, Kan.—Upon the orders of the State Board of Health, Superintendent Fairchild of the State School Department has sent instructions to local school authorities over the State to abolish the common drinking cup in all the schoolhouses. The ban on all such cups also applies to all universities and colleges in the State, both public and private.

#### Surface Water in Reservoir Causes Typhoid

Waverly, Kan.—Professor Hoad, Engineer of the State Board of Health, who is investigating the sanitary condition of Kansas towns, says the worst place he has seen for many days is Waverly. The town has a population of about 500 or more people, and for the last two years typhoid fever has been practically continuous. Professor Hoad said that he and Dr. Crumbine, Secretary of the Board, had studied carefully all the probable causes, eliminating them one by one—even Dr. Crumbine's fly—until finally it was narrowed down to the city water. The city gets its water from a large well or small reservoir, and this had been continually polluted by surface washings. Professor Hoad made the statement that if at the present time the same per cent of cases to the number of population existed in Topeka as now exist in Waverly there would be about 550 cases of typhoid in Topeka. He and Dr. Crumbine appeared before the City Council and ordered them to cement the outside of the wall, which is to be raised three feet. Then the water is to be pumped out and the inside of the wall plastered, after which the well is to be thoroughly disinfected. When this is done Professor Hoad will inspect the work and make a test of the water.

## WATER SUPPLY

### To Examine All City Wells

Columbus, O.—Convinced that all the typhoid fever that has prevailed in Columbus is due to the drinking of well water, Dr. Sterling B. Taylor, Health Officer, will have every well in the city examined and the water analyzed. The city water is proving able to stand the test of the warm weather and is perfectly pure and the only water that is fit to drink, and absolutely free from typhoid germs, except some of the sterilized or spring waters. A number of wells have already been closed, and a report will be made of every well where water is being used for domestic purposes within as short a time as possible.

### Concrete Reservoir Bottom Fails in Two Years

Duluth, Minn.—Complaints regarding the quality of the water in West Duluth led to the emptying of the reservoir. It was found that the concrete bottom had disintegrated, and it will be relaid. The reservoir was finished in December, two years ago, and water was at once let in, the risk being considered less than that which would be incurred by leaving the concrete exposed in the winter. Besides laying the new bottom, a concrete roadway will be built on the north and west sides, with an elevated curb on the reservoir side and a rubble retaining wall on the other side, the roadway and the elevated curb forming a gutter to carry away the rainwater and preventing it from washing earth and other substances into the reservoir.

### Failure to Supply Blueprints Shuts Out Competition

East Liverpool, O.—Only two bids, both from local contractors, were received for the proposed filtration plant Friday, August 13. Both of the bids are said to be informal. Letters have been received by Mayor S. W. Crawford from the Norwood Engineering Company, Florence, Mass.; the Roberts Filter Manufacturing Company, Philadelphia, Pa.; the Pittsburg Filter Manufacturing Company, Pittsburg, Pa., and the American Water Softener Company, Philadelphia, Pa., all stating that they wished to bid on the work, but could not make out their bids properly without considerable expense unless they could have blueprints of the plans and drawings of the proposed plant. These, they say, they have been unable to obtain.

### New Water Purification Plant in Successful Operation

Oklahoma City, Okla.—The repairs to the sedimentation basin, the walls of which gave way last spring, have been made and the purification plant works finely and the supply is abundant. Superintendent Shinkle is now turning his attention to extensions of mains and landscape gardening at the grounds of the pumping station. Cement walks are being laid out, the grounds sodded and flowers and shrubbery planted.

### Militia Makes Trouble for Water Works Men

Taunton, Mass.—Owing to fear of pollution of the waters of Asswampsett and Long Pond by the militia engaged in maneuvers in the neighborhood, Superintendent George A. King has decided to use only water from Elder's Pond for the next month. New Bedford authorities are watching their supply closely.

### Water Famine Due to Leak

Royal Center, Ind.—The town reservoir holds 34,000 gallons of water and the pumps should fill it in a day. Yet the pumps have to work night and day to keep water in it. There are only 65 water consumers, and it is hardly possible that the average consumption is 523 gallons. Half the streets have been torn up in an effort to discover the leak, but in vain.

### Report on Pure Water Bill

Washington, D. C.—Reporting on a bill now before Congress "to provide for the further purification of the water supply of the District of Columbia," the Commissioners told Chairman Smith of the House District Committee that the report of investigating engineers indicates that preliminary means for the purification of the water before it enters the filtration plant in certain seasons of the year are necessary, but that, as they have no jurisdiction over the water until it leaves the plant, they are not in a position to make a definite statement regarding the best method to be adopted.

### Village Has Water Works with Special Fire Service

Pinconning, Mich.—A new water system has been put into operation by Pinconning Village which will meet all the requirements of the residents for years to come. It consists of two plants, one at the bay shore, which delivers water through an 8-inch pipe to a tank in the village with an elevation of 35 feet and a capacity of 165,000 gallons. This is connected with the city mains and gives pressure enough for domestic use, the pumps at the bay having a capacity of 800 gallons per minute. The second plant, which is for fire protection, consists of a brick reservoir holding 12,000 gallons, a steel pressure tank holding 10,000 gallons and a 20-horsepower gasoline engine with duplex pump and air compressor. The water flows from the elevated tank by gravity into the brick reservoir and then is pumped into the pressure tank, where a pressure of 100 pounds is always maintained, giving the Fire Department enough water to run two streams for 30 minutes and giving the engineer plenty of time to start the pumps. There is a reserve of 87,000 gallons of water at all times, which is sufficient to protect the village in the event of a breakdown or other accident at the bay shore plant. The machinery was manufactured by the Fairbanks-Morse Company, of Detroit, and was installed by Frank Demarest.

### Proposed Municipal Supply Is Impure

San Francisco, Cal.—Analysis made of water from the supply of the County Line Water Company by Chemist C. W. Beaver of the Board of Public Works and Bacteriologist Ryfkogel is disappointing. The tests were made in view of a proposition for the city to purchase the plant. The chemist states that the nitrate content of the spring water increased from 0.86 parts per million in May, 1907, to 2,968 parts in August, 1909; the nitrate content of the well water is nearly 8 per 1,000,000. The chemist finds 400 colonies of bacteria per cubic centimeter in water from the reservoir, 1,000 from the pumping station and 1,400 from a tap.

### Park Water Supply Contaminated

San Francisco, Cal.—By order of the Board of Health all the drinking faucets in Golden Gate Park have been removed and the pipes plugged. The park has an independent water supply from wells, from which the water is pumped to a reservoir and thence distributed in pipes. It was found that the wells were badly contaminated by sewage from the Sunset district.

### Filter Beds Nearly Completed, but Pumps Lacking

Pittsburg, Pa.—Director of Public Works Joseph G. Armstrong has announced that the 10 new filter beds being built at Aspinwall by the contracting firm of Westwater & Casey will be completed by January 1, five months ahead of time. The contractors will earn a bonus of about \$15,000, whereas the contractor who built the original plant was penalized in the sum of \$300,000. As the pumps have not been provided, the filter beds cannot be used until November, 1910.

### Public Sanitary Bubble Fountains Installed

Washington, D. C.—Ice water is now supplied from the public drinking fountain at Seventh street and Pennsylvania avenue, and within a few days four fountains of the sanitary bubble type will be installed. The District has no funds with which to buy ice, but an appeal to the public for subscriptions for this purpose met with such prompt and generous response that it is hoped that it will be possible to furnish ice water for all the fountains. Otherwise the ordinary filtered, uncooled Potomac water will be supplied.

### City Water Too Hot

Youngstown, O.—Youngstown water takers cannot enjoy the luxury of a cold bath these days. Owing to the low stage of the river and the fact that the Ohio Steel Works uses the water several times over before discharging it above the city intake pipes, it is delivered through the city mains at about 87 degrees Fahrenheit. Complaint has been lodged with the city officials, but they are powerless to remedy matters. Fish that happen to get below the outlet of the steel mill are scalded to death by the water which is discharged from the mill at the boiling point. Youngstown water users do not have to follow any physician's injunction to boil their drinking water if they use the city supply.

## STREET LIGHTING AND POWER

### To Insure Purity of Gas Supply

Boston, Mass.—Under the act of the Legislature passed at the last session, the State Board of Gas and Electric Light Commissioners is preparing to send to companies all over the State the standard to which their gas must conform as to purity of the supply to consumers. The Board is authorized to make a test of gas supplied by any company as often as it considers it necessary, and it has decided that the average of these inspections shall be ascertained by averaging the amount of sulphur ammonia and sulphuretted hydrogen found on three successive inspections. That, if upon this average the gas shows more than 30 grains of sulphur, 10 grains of ammonia or any sulphuretted hydrogen per cubic foot of gas, a fine can be levied on the company manufacturing such gas. The Board states that it proposes to make as frequent an inspection of the gas supplied by any company as in its opinion it decides that public interest may require. When gas below the standard is supplied the Board announces its intention of making a second inspection as soon thereafter as in its judgment the company may be expected by reasonable diligence to have been able to bring it to the required standard.

### Galveston Has First Arch of Lights

Galveston, Tex.—Citizens who erected the first electric arch in the city at the corner of Twentieth and Market streets have offered to give it to the city if the city would light it. It will consume only a little more current than the arc lights which it will replace. It is equipped with 116 two-candlepower incandescents, consuming 10 watts each. In substituting the arch for the street light the public-spirited citizens who paid for the construction and erection of the permanent metal arch had in view the inauguration of a movement which would eventually make Galveston one of the best lighted cities in the South, while to-day it ranks very close to the tail-end in illumination. The arch is a costly affair.

### Wisconsin Plans to Tax Water Powers

Madison, Wis.—A majority of the members of the Legislative Special Committee on Water Powers are in favor of passing legislation providing for the taxation of water powers. The committee takes the ground that water power rights are not a portion of the realty, and as such the property of riparian owners. Two plans are being considered. First, a law asserting the State ownership of the water powers as paramount to that of the riparian owners, and providing for an annual rental of these powers at a specified amount. Second, a proposition for State control of the water powers, and providing for a license fee for the use of the franchise. The theory on which the water power committee believes that legislation will be upheld is that the State has a right to conserve its resources.

### Light Troubles of Reading

Reading, Pa.—Judge Stevens has granted a temporary injunction against the execution of the contract awarded to the Metropolitan Electric Company by Councils several weeks ago for the lighting of the streets for a period of 10 years. From the language of an opinion handed down by the Court the city will be enjoined from awarding the contract for a period longer than five years at the final hearing, which will take place shortly. An act of Assembly permits cities of the third class to award a contract for a period of 10 years, but an ordinance passed by the city forbids the execution of any contract for a period longer than five years. It is likely that this law will be repealed or amended so as to read for a period of 10 years and then new bids will be asked for.

### Zenith Cities Rivals in Lighting

Duluth, Minn.—Property owners along East Superior street, between First avenue East and Fifth avenue East, have notified Mayor Haven that they intend to start an agitation in their district for a street lighting system similar to that of Tower avenue, Superior, where cluster lights at the top of poles along the edges of the sidewalks on both sides of the street furnish the illumination. The plan is similar to that proposed for First street, where cluster lights have already been placed in front of the Elks' Club,

the Duluth-Edison Electric Company Building and one or two other places. Smaller standards are contemplated for Superior street, however. It is the expressed belief of the Mayor and several of the Aldermen that this lighting system will be extended through the business district on Superior street, taking the place of the present electric signs.

Superior, Wis.—Ornamental street lights will be installed on Broadway, between Ogden and Tower avenues. It is planned to extend the "Great White Way" from Tower avenue to the Union Station also. The movement is being pushed by the publicity committee of the Commercial Club.

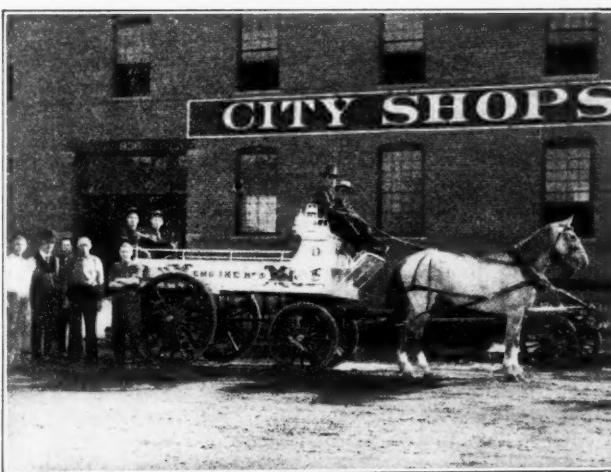
## FIRE AND POLICE

### Allentown May Have Paid Fire Department

Allentown, Pa.—A threatened revolt of two of Allentown's volunteer fire companies has brought the question of a paid department to the front, and it may be the prominent issue of the next election. Under the system that has been in vogue in Allentown for more than half a century the municipality owns the fire houses and apparatus, but the horses are the property of the eleven companies and are maintained from revenues collected by street sprinkling and hauling. The Hibernian and Allen companies say that the cost of maintenance exceeds the revenue and have asked Councils to appropriate \$1,000 to meet the deficiency. Mayor Hunsicker vetoed the ordinance and the companies have advertised their horses for sale.

### New Hose Wagon Built at City Shops

Denver, Col.—Superintendent Peter Gorman of the city shops has delivered to the Fire Department the first of the two fire wagons ordered built at the shops several months ago. This wagon is equipped with rubber tires, hub brakes, iron spring blocks instead of wooden, as formerly used, and the nickel rods are made of solid material instead of tubing, as has been used heretofore. The new wagon is many pounds lighter than others in service. The last up-to-date hose wagons purchased by the Department, three



DENVER'S HOME-MADE HOSE WAGON

years ago, cost the city \$1,005 each. Superintendent Gorman of the city shops drew up plans for the new wagons. One was to have rubber tires and the other steel tires. The total cost for both wagons was placed at \$750. This is a practical demonstration of the importance of the city shops. The new wagon was placed in service at once at the quarters of Engine Company No. 8, Sixteenth avenue and Marion street.

### One Telephone Number for Fire Headquarters

Knoxville, Tenn.—With the completion of the new system of wiring for the Fire Department, a resident may now call Fire Headquarters by ringing No. 1000 on either telephone system. The fireman on watch immediately on receipt of the message notifies the company nearest to the fire to answer the call.

### Policemen and Firemen to Ride Free

Atlanta, Ga.—Governor Brown has signed the bill requiring the various street car systems to allow firemen and policemen to ride free on the cars.

### Firemen Are Expert Landscape Gardeners

Washington, D. C.—Nowhere in the District of Columbia, perhaps is to be found a more beautiful spot than the lawn which graces the front of Engine House No. 12, on North Capitol and Quincy streets. The building itself is of the trim red brick pattern, upon which the homes of the District firemen are generally fashioned. It is neat, unpretentious, scrupulously clean and as becomingly quiet as a church, except when the gong sounds that calls its inmates to a conflagration. But on the north front, just to the right of the doors of the engine house, there stretches a bit of lawn 50 feet in width by a depth of from 30 to 35 feet. It has the appearance of a rich, thick carpet of beautiful green plush, so closely do the clover plants and the tiny blades of grass blend one with the other, with never a one of them daring to lift its head above the others. In this bed of green are several masterpieces of landscape beauty. In the center of a large circle of scarlet sage in full bloom, surrounded with a thin border of silver shed by a little plant whose name was not even known to the horticulturist who



Courtesy of The Washington Star

GARDEN MAINTAINED BY WASHINGTON FIREMEN

placed it there, stands what might be called the key to the general design. On either side is a large diamond in which red and yellow coleus plants blend their rich colors in a harmonious bed of beauty, each of which shows in the rich red of the darker foliated plant the figure "12" that adorns the cap of every man in the engine house. Back toward the building line and sweeping inward in a semi-circular curve lies the artistic background of this beautiful bit of floriculture. In the center is a statue of Flora holding in her hands a white garland of flowers, flanked on either side by two flourishing plants of the elephant ear variety, and further beyond tall canna plants with gorgeous red and yellow blossoms to lend the beauty of their color to the contrast. Thickly planted in and around this plot, as if to hide every glimpse of Mother Earth, are more of the pretty leaved red and yellow coleus plants, while forming the boundary of the curve in the rear rises a trellis 10 feet high, thickly covered with the green leaves of the moon vine.

### Explosion Puts Police Alarm Out of Commission

St. Paul, Minn.—The signal and alarm system at Central Police Headquarters was recently put out of commission by a fire and explosion. Efforts to patch up the labyrinth of electrical wiring was considered useless, and a temporary system is now in use. An old switchboard was pressed into service by quick and strenuous work after the fire and within 24 hours the Department was receiving some of the box calls over its wires. The greater part of the alarms and signals, however, are now received over private telephone wires, but the service is quick, and the Department is experiencing slight difficulty in handling ordinary business.

### Cranford's Fire Alarm Tangled

Cranford, N. J.—The fire alarm system, according to an expert, was recently grounded six times on account of a tangle of telephone wires. Chief Bowers detailed firemen to watch for fires until the system could be put in order.

### Alarm System Will Have Speed Transformer

Lawrence, Mass.—The new fire alarm system to be installed by the Gamewell Company will have a speed transformer to operate the heavy hammers used on tower bells. Only two instruments like this have been used. Lynn has had one for three years and Brockton one year. In order to save the expense of an operator at headquarters and to secure the advantages of all the quick-hitch modern apparatus now in use, it is necessary to have the alarms come in on fast time; that is, one second between blows. As it is impossible to operate the hammers striking the tower bells in less than three seconds' time the speed transformer is used.

### Police Force All Detectives

Georgetown, Wash.—The Georgetown police force has been abolished, so far as patrolmen are concerned, for they have all been made detectives. An ordinance was passed providing that police officers may be assigned to detective duty, in which case they are only required to wear a small star concealed on their civilian dress. Mayor Mueller at once made all the patrolmen detectives. The intent of the author of the ordinance, Councilman Charles Hale, was to require all patrolmen to wear uniforms, excepting only those who were assigned to detective duty. The question as to the meaning of the ordinance will be referred to the courts.

### Fire Commissioners Disband Volunteer Company

Lockport, N. Y.—The Board of Fire Commissioners, against whose members charges have been preferred by four of the five fire companies of the city, has decided to disband the Hydrant Hose Company, one of the oldest organizations of the city. The Commissioners say that the members of the Hydrant company have been the chief agitators of the recent squabble. There is no great desire on the part of the volunteers to continue in service, as they claim that they have very little say in Department matters since the paid firemen were installed. It is said that a paid department will be the only solution of the present difficulties.

### Fire Engineers Vindicated

Manchester, N. H.—A hearing which had been in progress for two days, to give opportunity to Chief Thomas W. Lane and his associate engineers of the Fire Department to show cause why they should not be dismissed from office, was brought to an ending when it was voted by the Mayor and Aldermen to place the charges against the Fire Engineers on the table, and to adjourn. This is regarded as a vindication of the Fire Engineers.

### Fire Engines Burned; Then Town

Milton, Del.—The town of Milton, 2,000 inhabitants, has been destroyed by fire. Of the 300 buildings only about a dozen remain, and these are residences. The fire engine house burned first, and no apparatus was left to fight the fire, though there was plenty of water.

### Firemen Quench Blaze with Mud

New York, N. Y.—Mud instead of water was used by firemen to put out a blaze in a paint factory in Grand street. The firemen got the mud from an excavation for a new building around the corner and formed themselves into a bucket brigade.

### School for Police and Firemen

Pensacola, Fla.—Examination of the officers of the Police Department has been concluded, and its close marks the first time in the history of the city that a school has been conducted for the police force. Over two-thirds of the officers thus far examined have stood examinations entitling them to remain in the Department, and only about 10 have failed. These are still on the force, but upon conclusion of the school it is anticipated that they will be removed by the Board and their places filled with men who come up to the standard mentally as well as physically. With the conclusion of the Police Department the Board will turn its attention to the Fire Department and every man will be examined.

### No More Wooden Playhouses in Portland

Portland, Ore.—An ordinance recommended by the Fire Committee of the City Executive Board prohibiting performances in frame structures after April 1, 1910, has passed Council.

## GOVERNMENT AND FINANCE

## Low Levy Under Commission Plan

Des Moines, Ia.—The City Council has fixed the city tax levy at 36.4 mills for the coming year, a reduction from the tax levy under the old form of government of over 2 mills. The Council had expected to have to increase the levy 9 mills, but by judicial financing this was avoided and the city will continue to save money to the taxpayers under the commission form.

## Los Angeles Annexes San Pedro

Los Angeles, Cal.—At a special election the cities of Los Angeles and San Pedro have decided to consolidate. With the consolidation accomplished the control of the local harbor becomes practically vested in the hands of the city government of Los Angeles. It is the culmination of a fight extending over several years between this city and private corporations for supremacy at San Pedro. Under the consolidation compact Los Angeles has promised San Pedro and Wilmington to expend \$10,000,000 in those cities within the next 10 years in dock and other municipal improvements.

## Ordinance Regarding Labor Service

New Bedford, Mass.—An ordinance has been passed providing that no person shall be employed in the labor service of any department of the city except upon application in writing, and unless he is a citizen of the United States, has resided in Massachusetts for a year and in the city six months. Every applicant must give his address, age, place of birth and period of residence in the State and city. If the applicant is a naturalized citizen, or his parents were naturalized during his minority, he must show his naturalization papers or those of his father.

## City Officials Indicted for Creating a Nuisance

Lexington, Ky.—The Grand Jury caused a surprise when it returned indictments against Mayor John Skain, the City of Lexington, the City Health Officer, Board of Public Works, Buford A. Graves, the contractor in charge of the crematory and the Lexington Street Railway. The indictments were based on the alleged failure of the accused to keep the streets, crematory, garbage department and sewers in proper condition. The indictments against the city officials charge nonfeasance in office, those against Graves are for permitting a nuisance, while the Street Railway Company is charged with "creating, maintaining and suffering a public nuisance." One indictment each was returned against Mayor Skain and other city officials designated, two against Contractor Graves and five against the Street Railway company.

## City Has Right to Move Pipes

San Francisco, Cal.—City Attorney Long has rendered an opinion in which he holds that the city has a right to remove the pipes and conduits of corporations whenever they are found to interfere with the work planned by the Board of Public Works. The question arose when the Board of Works, through the City Engineer's office, outlined the plans for the new fire auxiliary system. Many of the pipes belonging to the Spring Valley and the San Francisco Gas and Electric Companies were found to be in the way. A conference between the attorneys for these companies and the City Attorney resulted in the passage of an ordinance giving the city the right to remove the obstructing pipes and to charge the cost to the companies.

## Draft of New Charter Is Completed

Tacoma, Wash.—The Charter Revision Committee has completed its draft of the proposed new City Charter, and has held its last meeting. The document contains 47,000 words. One hundred and thirty-five typewritten sheets of paper the size of business stationery are required to set forth the provisions of the Commission plan of government. The committee decided that 12 per cent of the voters at the last preceding election shall be the number required to demand a referendum of an ordinance granting a franchise to any public service corporation. This is the smallest percentage required in the referendum or recall provisions. Twenty per cent of the voters may petition for a referendum vote on any other ordinance and 25 per cent may demand a recall election.

## REFUSE COLLECTION AND DISPOSAL

## Weighing Garbage

Davenport, Ia.—The Health Department is weighing all the city garbage once a week for eight weeks, with a view to collecting data as to cost of handling per ton and to have figures available for contractors should a new method of disposal be decided on.

## Scheme for Disposing of Waste Paper

Towson, Md.—Dr. R. C. Manenburg, Health Officer of the Ninth District, who has been inspecting sanitary conditions, has asked the County Commissioners for a number of pieces of terra cotta pipe to place about the village for waste paper. The idea is to burn the paper in the pipes.

## Say Garbage Is Responsible for Typhoid

Glen Ridge, N. J.—A petition has been presented to the courts by the residents of Glen Ridge, asking for an injunction restraining the Montclair authorities from making further use of the old Wheeler millpond as a dumping ground for its garbage. The dump, according to the petitioners, is a menace to the health of the community, and claimed by some to be the cause of the typhoid fever epidemic in that locality.

## Garbage Rules and Regulations

Johnstown, Pa.—An unusually complete set of rules and regulations governing the care and disposal of garbage and waste has been adopted by the Board of Health. The regulations contemplate the collection and sanitary disposal of all material by a contractor.

## Four Garbage Incinerators for Louisville

Louisville, Ky.—Dr. Rudolph Hering, of New York, who recently spent several hours conferring with Mayor Grinstead and the Board of Public Works in regard to the necessity of garbage incinerators for Louisville, will report at an early date upon his findings. He toured the city, and suggested that his report will advise the establishment of four incinerators at four quarters of the city to take care of the immense amount of trash and garbage produced within the city limits each day. Mayor Grinstead and the members of the Board of Public Works are hopeful that very soon plans may be perfected by which at least one incinerator may be established. The beauty and cleanliness of those cities where garbage is destroyed by fire is proverbial throughout the country, and it is believed, besides, that the public health is greatly conserved by such disposal.

## Praises Minneapolis Garbage System

Pittsburg, Pa.—Director E. R. Walters, who has just returned from a Western trip, credits Minneapolis with having the best and cheapest system for the collection and incineration of garbage of any city which he visited. From his observations it is likely that similar methods will be recommended for this city. In Minneapolis garbage is gathered by the city and hauled to the incinerating plant five miles away. The plant is odorless. The steam supplied at the plant is used in a tuberculosis hospital and the county prison nearby. Director Walters next will visit Washington, Baltimore, New York and Boston in search of data.

## Sidewalks Must Be Swept at Night

Portland, Ore.—An improvement in the present unsatisfactory system of street and sidewalk cleaning is to be inaugurated in the business district. Proprietors of all places of business will be required to clean off their sidewalks between the hours of 5 and 10 p. m. This will give the street cleaners an opportunity of gathering it up on their regular nightly trips.

## Throwing of Garbage into Harbor Prohibited

Providence, R. I.—Harbor Master John H. Maguire, in compliance with an order from Alderman John Kelso, has requested the officials of the various steamship lines whose vessels use Providence Harbor to refrain from further throwing of garbage into the Providence River and to place it in receptacles at their docks, where it will be collected by the city.

## RAPID TRANSIT

### Auto-Car Line for Small City

Anniston, Ala.—William A. Zinn, city, has asked the City Council for a franchise to operate a street car line for the transportation of passengers, baggage, etc., for 30 years, provided that work is begun in three years. Mr. Zinn says that in addition to operating the street car system he proposes to erect a plant for the "auto cars" made after European patterns, which carry their own motive power, and do away with the use of the trolley, although they may be equipped with a fifth wheel, so they may run on tracks.

### Would License Trolley Cars

Kearny, N. J.—An ordinance is pending which will require that all trolley cars be licensed after an inspection by the Chief of Police and Health Inspector. It also prohibits the railroad company from allowing passengers to ride on the running boards of open cars and on the rear platforms of closed cars.

### To Prevent Congestion of Cars

New York, N. Y.—The Metropolitan Street Railway Company has put into operation a new plan to prevent the congestion of cars at Broadway and Thirty-fourth street. The figures "1, 2, 3, 4, 5" have been painted on the pavement about 35 feet apart along the track to denote where the cars are to stop when they arrive in a congestion at the crossing. The flagman there seeing, say, five cars coming close together, shouts to the motorman of the first car "No. 5," "No. 4" to the next motorman, "No. 3" to the next, and so on. This enables the cars following No. 5 to have room to stop without interfering with the cars below on the crosstown lines. But it stops the first car of the bunch at No. 5, far above the usual stopping place.

### Seven-Car Trolley Train

South Bend, Ind.—A seven-car trolley train, the first run in this section of the country, was recently operated by the South Shore Road. The train was taken out of South Bend in two sections, one of four cars and the other of three. When the city limits were passed and the high tension wires reached the two sections were coupled together and the run to Michigan City made without mishap, although several stops were made at various stations. The train was made up of regular cars and trailers, cars not equipped with motors.

### Gasoline Motor Car for Interurban Service

Topeka, Kan.—A McKeen gasoline motor car service will be inaugurated by the Santa Fé Railroad between Emporia and Topeka, experimentally, for one month. The car will make the distance of 64 miles in two hours and ten minutes. The car is 70 feet long and weighs 60,000 pounds. The engines are rated at 200 horsepower. The car, which is 38 feet long inside, contains a compartment for the motorman, a smoking compartment with seats for 20, while the main part of the car will seat 50.

## MISCELLANEOUS

### City to Operate a Public Bakery

Budapest, Hungary.—The city has decided to establish a municipal bakery capable of producing 50,000 pounds of bread daily. The object of the enterprise is directly and by competition to establish a selling price for bread based on the current price of wheat and flour. The bakery will be a model one. Modern machinery will be used and contact by the workmen with the bread will be avoided. The cost of the bakery, not including the land, will be \$125,000. The bread will be sold partly in special shops belonging to the municipality and partly by merchants at a price fixed by the municipality.

### Switching Engines Have Smoke Consumers

Indianapolis, Ind.—The Pennsylvania Railroad Company has joined the ranks of those who will observe the local anti-smoke ordinance, and has notified Inspector Brown that all of its switch engines have been equipped with a smoke preventing device and that similar precautions had been taken with the company's machine shops and roundhouse. With this action as an argument, Inspector Brown expects to begin a crusade against other railroad companies.

### Semaphores Not to Regulate Street Traffic

Cleveland, O.—Chief Fred Kohler has had his attention called to a traffic regulator invented by Lieutenant Jerry Murphy. The regulator is controlled by two buttons, and can be operated by a patrolman standing in the middle of the street or on the sidewalk. A bell with semaphores at each crossing controls traffic during the day and red and white lights are used at night. The policeman at the street intersection pushes one button and the semaphores showing the word "Stop" are dropped, stopping east and west traffic. At the same time semaphores with the words "Go ahead" are raised and allow traffic north and south to move. The bell attracts the drivers' attention to the semaphores. At night red and white lights are used. They are controlled by the button and are placed behind the semaphores. The semaphores and lights are incased in a box 30 inches long and 14 inches high. Four boxes are used at a street intersection, and are fastened to span wires in the center of each crossing. Chief Kohler says he won't try out the electrical regulator here. "Our new whistle system is a success and good enough for us," Kohler said.

### Norfolk Protects Trees and Grass Plots

Norfolk, Va.—Ordinances have been passed providing for the care and protection of trees and for the care and protection of grass plots on the sidewalks of the city.

### Slaughter House Inspection May Be Required

Norfolk, Va.—An ordinance is pending providing for the office of City Veterinarian at a salary of \$1,800 a year, who shall personally inspect every animal slaughtered for sale, either at the time or immediately preceding the slaughtering. Birds, fowl and meats inspected under the laws of the State or of Congress are exempted from city inspection. The ordinance does not contain any specifications on meat of local slaughter houses other than it shall not be diseased. Meat slaughtered on farms is exempt from the full operation of the law in that it is not required to be inspected. Satisfactory evidence must be given the inspector, showing that the meat is not of a diseased animal, that the animal was kept on the farm 12 months prior to being slaughtered, and that it had not within a specified time been exposed to contagion.

### Stopping Speed Maniacs Is Expensive

Pawtucket, R. I.—The work of protecting the people from the dangers caused by automobile speed maniacs has been going on since May, and is proving to be an expensive luxury. The work will cost about \$2,500 for the year. So far 41 automobilists have been arrested. With one exception these persons have either pleaded guilty or have been adjudged guilty after a trial and fines have been imposed. The largest fine was \$50, the smallest \$10. The total amount of fines imposed was \$645, and the costs \$116.25. Seven cases have been appealed; in the others fines were promptly paid. Unfortunately for the City Treasury, the fines go to the Highway Commission, and by them are applied to the construction of roads, but the Commission never builds roads within the city limits.

### Distributes Copies of Automobile Ordinance

Richmond, Va.—At the order of the Police Commissioner copies of the ordinance governing the running of automobiles are being printed and distributed among owners of motor cars.

### Automobile Regulations for Streets and Parks Differ

Washington, D. C.—Police regulations recently promulgated by the District Commissioners for the government of motor vehicles in streets, avenues and roads in the District will not apply to such vehicles when in the public parks and reservations. These parks are under the jurisdiction of the Chief of Engineers of the United States Army, except in the case of Potomac Park, which is under the direct jurisdiction of the Secretary of War. Col. Spencer Cosby, Engineer Officer in Charge of Public Buildings and Grounds, to whom a copy of the new regulations of the District was submitted, prefers the regulation recently adopted by the Chief of Engineers for the Public Parks and Reservation, which reads: "It is forbidden to run a motor vehicle that emits excessive, unusual or offensive quantities of gas or smoke or disagreeable odors or that makes an unnecessary or unusual amount of noise."

## LEGAL NEWS

**A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities****Removal of Policeman—Hearing**

People ex rel. O'Neill v. Bingham Police Commissioner.—The mere fact that a policeman against whom charges have been presented has retained counsel does not give him the absolute right to have the hearing on the charges adjourned from time to time until such counsel can appear for him. Where a policeman against whom charges have been presented asks for an adjournment of the hearing, the Commissioner has the right to consider the disturbance of the detail of the police force incident to requiring them to appear from time to time on such hearing, and also the expense to which the city will be subjected in subpoenaing witnesses, and the importance of having an early decision on the charges.—New York Supreme Court, 117 N. Y. S., 429.

**Bond Elections—Statutory Provisions**

City of Graymount et al. v. Stott.—Code 1907 provides that the governing body of a city may order elections for the purpose of deciding whether the city shall issue bonds for constructing schoolhouses, sewers, etc., but no second election shall be held for the same purpose within two years of an election theretofore held. In July, 1908, bonds were voted for school purposes and for sewerage "construction." In February, 1909, bonds were voted for school purposes and for "extension" of sewerage. Held, that the intent of the law was to authorize elections for bond issues but once during any two years for the same general purpose, and, though the second issue of bonds was to construct separate and distinct schools from those formerly issued, and to "extend" the sewerage system, rather than "construct" it, the general purposes of the two issues were the same, "extension" necessarily including "construction," and the second election was invalid.—Supreme Court of Alabama, 49 S. R., 683.

**Street Obstruction—Instructions**

Sutter v. Kansas City.—In an action for injuries to a pedestrian, caused by tripping over a brick thrown on the sidewalk from a pile of brick between the curb and the sidewalk, an instruction that the defendant was responsible if the brick was placed on the sidewalk, so that it was "liable" to fall upon or be thrown thereupon, is erroneous, since the use of the word "liable" imposed too great a degree of care on the city.—Kansas City (Mo.) Court of Appeals; 119 S. W. R., 1084.

**Defective Street—Ice**

Quarles v. Kansas City.—A city is not liable for injuries caused by falling on ice which lies upon the surface of the city; but, if it permits such ice to become and remain in such uneven, rough or rounded-up condition as to become a dangerous obstruction to travel by pedestrians, the city is liable.—Kansas City (Mo.) Court of Appeals; 119 S. W. R., 1019.

**Board of Equalization—Term of Office**

Rieder v. City of Newport.—The Act of March 29, 1902, relating to boards of equalization in cities of the second class, provides for such a board, to be selected by the Mayor, to meet on the first Monday in January, 1903, and every four years thereafter, and that in each of the three years subsequent to the quadrennial equalization the board shall convene on the first Monday in January for a period not longer than six days, etc. Held, that the act contemplated that the board which met in January, 1903, was to hold for four years, and that a new board was to be appointed every four years thereafter.—Court of Appeals of Kentucky; 119 S. W. R., 1188.

**Charter Amendment—Construction of Provisions**

Migliavacca v. City of Napa et al.—Under constitution relating to the freeholders' charter, and providing that "the charter so ratified may be amended at intervals of not less than two years," a proposed amendment, which was defeated at the election thereon, does not prevent submission of another proposition for amendment within two years.—California Court of Appeal, 102 P. R., 227.

**Ordinance Fixing Salary—Court Review**

State ex rel. Gentry v. Mayor, Etc., of Village of Dodson.—The plaintiff, alleging that he was prevented from performing the duties and enjoying the emoluments of the office of Marshal of the village of Dodson by the wrongful, illegal, fraudulent, malicious acts of the Mayor and Board of Aldermen of that village in fixing by ordinance his bond at the unreasonable and outrageous sum of \$3,000, and the salary of the Marshal at the small, ridiculous, unreasonable, and unjust sum of \$1 per month, prayed the district court to declare the ordinance null and void because illegal and unreasonable, and that they be compelled, by mandamus, to fix a reasonable bond and reasonable compensation. The district court made the writ peremptory and ordered the defendant to fix the bond in a sum not exceeding \$1,000 and the Marshal's compensation at a sum not less than \$50 per month. This court finds: That the acts of defendants were taken under an express power and authority delegated to them without restriction or limitation by the General Assembly in sections 15 and 19 of Act No. 136. That the General Assembly was authorized under the Constitution to make such delegation of power and authority. That the defendants have acted within the power and authority delegated. That no Constitution or legal right of the plaintiff has been violated. Under the circumstances disclosed, the courts are without constitutional power or authority to interfere and to substitute their judgment and discretion in lieu of those of the body to which they have been legally confined.—Supreme Court of Louisiana, 49 S. R., 635.

**Public Improvements—Assessments—Penalty**

Barber Asphalt Paving Co. v. Webster County et al.—Plaintiff constructed a pavement under a contract with the city, which provided that, upon the completion of the work, the cost should be assessed upon abutting owners and certificates of special assessments should be accepted by plaintiff in payment, payable in instalments, if requested, with 6 per cent interest, and an ordinance provided that, where property owners did not pay the assessments in instalments as permitted, the whole amount should be payable at the same time as the March semi-annual payment of ordinary taxes, and made the same provision as to maturing installments where that plan was adopted. The Code imposes interest as a penalty of one per cent per month for the whole, if the first installment of taxes is not paid by a certain date, and section 825 provides that the special assessments, with interest, shall become delinquent on the first day of March next after maturity, and shall bear the same interest and penalties as ordinary taxes. Held, that since plaintiff, and not the city or county, was injured by delay in paying the special assessments for which certificates were issued to him in payment of the work, he was entitled to the penalty collected under the statute; the penalty being incident to the tax, and not being "interest" in addition to the 6 per cent stipulated in the contract.—Supreme Court of Iowa, 121 N. W. R., 1072.

**Bond Issue—Debt Limit**

Frost et al. v. Central City et al.—It is sufficient under the Constitution, limiting the indebtedness of fourth class cities to 5 per cent of the assessed value of the property, that the indebtedness does not exceed the constitutional limitation at the time of issuance and sale of the bonds, and the fact that the existing indebtedness, together with that created by the bonds, exceeded the limitation at the time of the election to authorize the issuance of the bonds would not make them invalid; the indebtedness not being created until the bonds were sold.—Court of Appeals of Kentucky; 120 S. W. R., 367.

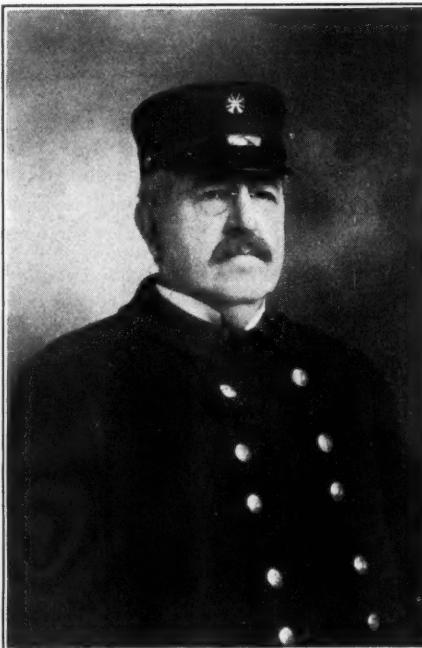
**Bond Election—Validity**

Wightman v. Village of Tecumseh et al.—The notice of a special village election showed that it was to be held for the purpose of voting on the question whether the village should issue bonds for the construction of sewers, and it appeared that there was a full discussion of the subject preceding the election. Held, that the fact that the ballots instead of reading "Shall a village loan \* \* \* for sewer purposes be authorized?" as prescribed by the Council, omitted the words "for sewer purposes" did not invalidate the election.—Supreme Court of Michigan; 122 N. W. R., 122.

## NEWS OF THE SOCIETIES

**International Association of Fire Engineers.**—The thirty-seventh annual convention of the association met at Hotel Morton, Grand Rapids, Mich., August 17-20. Over 500 members, including guests and exhibitors, were present. Fire Marshal Henry Lemoine, of Grand Rapids, called the meeting to order and introduced Charles H. Bender, president of the Board of Police and Fire Commissioners of the city, who delivered an address of welcome. President Fillmore Tyson, Louisville, and Fred Morrison, Watertown, N. Y., responded for the association. At the afternoon session the discussion of topics was in order. George A. Wallace, Cleveland, O., who was to have discussed the practicability of discarding steam fire engines where a high-pressure water service was in force, was absent. A paper on "Moral Hazards," by Frank G. Row, Grand Rapids, was read by Aldrich Blake. The point was made that the system of paying agents commissions instead of salaries had a tendency to increase risks. In the course of the discussion, J. A. Tremblay, Montreal, spoke of the effect of thorough inspection by members of the Fire Department in decreasing risks. John O. Glanville, of the Salvage Corps, St. Louis, introduced the subject of auto apparatus. He quoted figures to show that, considering territory covered, the auto apparatus was the cheapest to maintain. An abstract of this paper will be published in the "Municipal Journal and Engineer," September 1. Hugo Delfs, Lansing, Mich., gave a record of the work done by a Webb auto-engine during a period of eight months. W. H. Loller, Youngstown, O., gave a favorable report of the Webb apparatus in use in his city. C. E. Swingley, St. Louis, Mo., and J. J. Conway, Cincinnati, O., also spoke favorably of this machine. Greeley S. Curtis, New York, N. Y., mentioned that the steam auto-engine used in Boston delivered more water than the gasoline apparatus. The fact was mentioned that a steam propelled engine in Newark, N. J., had been the cause of fires. Clarence Maris, of the Ohio Fire Marshal's office, who was to have spoken on the necessity for the office of State Fire Marshal, was unable to be present on account of illness, but his paper was read by the secretary. It brought out forcibly how the fire losses could be greatly reduced by the efforts of a competent and active Fire Marshal, especially in the prevention of incendiary fires. If it were known that an incendiary would surely be caught and punished, there would be very few of such fires. In one State, in the first two and one-half years after the appointment of a State Fire Marshal, there were more convictions secured for arson than in the entire preceding century. This not because there were more such fires, but because of the active work of the Fire Marshal. Besides this line of work he investigates the causes of all fires and is thus enabled to make recommendations in regard to building laws and other things that will safeguard against fire loss. Eleven States now have Fire Marshals and six have the power of a Fire Marshal lodged in the Insurance Inspector. The paper brought out much favorable discussion and all chiefs were unanimous in their belief in the effectiveness of the work done by the Fire Marshal. Chief Lemoine, of Grand Rapids, made a motion, which was carried, that the association

co-operate with the various State associations in securing legislation which would provide for Fire Marshals in all States where there are now none. Dr. R. H. Nesbit, of Waukegan, Ill., delivered a paper on "Spontaneous Combustion." This was a most scholarly discussion of the origin and causes of fire, with various suggestions as to the method of extinguishing them. Dr. Nesbit gave numerous laboratory demonstrations to illustrate his talk. Chief Fred Morrison, of Watertown, N. Y., opened the afternoon with a paper on "Rubber Tires for Fire Apparatus." He stated that his experience had been that rubber tires not only were economy in the upkeep of apparatus, but added greatly to the safety of the men. There is less liability to slipping and less jolting of the machinery. Much of the apparatus throughout the country is now equipped with rubber tires and that not already so equipped will probably be so as soon as the change can be made.



CHIEF GEORGE W. HORTON

Chief Horton, of Baltimore, was unanimously elected president for the ensuing year. Chief John Thompson, of Toronto, Ontario, was unanimously elected first vice-president. Chief W. H. Loller, of Youngstown, O., was elected second vice-president. The hardest worker in the association, and the man who has contributed probably most to its success, Chief James McFall, of Roanoke, Va., was re-elected secretary. Chief Dan C. Larkin, of Dayton, O., was re-elected treasurer without opposition. Syracuse, N. Y., will be the next meeting place.

The subject, "How Do Fire Risks of America Compare with Those of Foreign Countries, and What Are the Most Economical Reforms to Be Made in Our Building Construction?" was assigned to George C. Hale, ex-Chief of the Kansas City Fire Department. Chief Hale could not be present, but he had sent his paper, which was read by the secretary. He called attention to the fact that in most European countries the construction was practically non-burnable and that very seldom did the fire spread from the building in which it started, and often not beyond the floor of origin. With this construction the work of the firemen was much re-

duced and consequently there is no necessity for the great expense for fire departments that faces all American cities. In many of the larger cities of Europe the cost of the fire department does not exceed \$300,000 per year, while in this country Chicago, with its \$4,000,000, and New York, with its \$10,000,000, are striking examples of the extreme cost of fire protection, this cost nearly equaling the loss. His recommendations were for fire-resisting construction laws and the proper enforcement of these laws. The secretary presented a paper prepared by G. E. Bruen, superintendent of the Electrical Department, National Board of Fire Underwriters, on "Fire Prevention."

Chief Thomas O'Connor, of New Orleans, presented a very practical paper on "How to Test the Efficiency of Steam Fire Engines." The paper really discussed the proper care and handling of the apparatus. Some of his suggestions were that the piston speed of the engine should not exceed 400 feet per second; all valves, bearings and fittings should be in proper condition; have a skilled man assigned to fire the engine. Good hose, with good connections, and delivering 400 gallons of water per minute, show a friction loss of approximately fifteen pounds per length. Consequently, with a single line of hose it is possible to use a 1 1/4-inch nozzle up to 600 feet, but above that a 1 1/2-inch nozzle is preferable. Inasmuch as the friction loss in the hose depends on the velocity of the water, and consequently on the amount which the hose carries, it is sometimes advisable to use two or even four lines of hose to get the desired amount of water and thus get much greater efficiency from both the engine and the hose. Chief O'Connor advocated the reduction of the length of hose used at fires by placing the hydrants and cisterns closer together than they now are. F. M. Griswold, of the National Board of Fire Underwriters, discussed the subject of co-operation between organized fire departments and the Fire Protection Association. He told considerable about the work of the Fire Protection Association in its endeavor to reduce annual fire losses. Captain Greeley S. Curtis, of New York, reported on the subject assigned to him at the Columbus Convention, "Should Piston Engines Take Their Feed from Suction or from Hydrant Pressure?" He stated that in practically all cases it was better to take from hydrant pressure, as that pressure was added to the work which the engine could do. Hydrant pressures were safe up to about 100 pounds, but above that the plumbing fixtures of householders might be affected. Chief Tremblay, of Montreal, exhibited an ingenious device which his department uses to enable them to secure water from the river during the extremely cold winter season when the river is frozen over. This consisted of a sheet metal tube with a close-fitting air-tight cap at one end and the upper end surrounded by a wooden box with a wooden cover. When the river begins to freeze in the winter these are placed with the air-tight end at a depth sufficient to be below the bottom of the ice and in such positions as will be most accessible to the department. In case of fire it is a very easy matter to knock out the bottom with a rake or the end of the suction tube and get free, clear water, unimpeded by ice.

A vote was taken to change the name of the association to the International Association of Fire Chiefs, instead of Fire Engineers. A majority

were in favor of this, but it did not pass, as it lacked the two-thirds vote necessary by the constitution.

The secretary read his report, which showed that the membership up to the present convention consisted of 422 chiefs, 89 associate members, 34 life members and 8 State associations, making a total of 519. At the present convention 70 chiefs and 45 associate members were enrolled. The collections for the year amounted to \$2,092.03, while the disbursements were \$2,005.42, leaving a balance of \$86.61.

The entertainment provided by the local committee, Mayor George R. Ellis, William B. Weston, Frank B. Winegar, Louis J. De Lamarter and Sidney F. Stevens, was greatly appreciated by the visitors. On Tuesday afternoon the ladies were treated to a trip to Reed's Lake, with tickets for Ramona Theater and the other concessions. On Wednesday afternoon they were taken for a trolley trip to the Soldiers' Home, North Park and John Ball Park, where they were treated to a band concert. That same evening the Ramona Park management at Reed's Lake had prepared what was called a Japanese Night, which was truly delightful. Thursday afternoon the ladies were taken to Nelson Matter Co.'s furniture factory, where they learned much of the manufacture of modern furniture. That same afternoon and evening the Elks of Grand Rapids opened their beautiful clubrooms to all of the visiting chiefs and guests. At 6 o'clock a very elaborate banquet was given at the Armory. Rev. J. T. Husted invoked the blessing and after the dinner Mayor George E. Ellis, in a very pleasing speech, introduced the toastmaster, Frank Welton. The first speaker he introduced was Rt. Rev. Mgr. Joseph Schrembs, who paid great tribute to the heroism of the fire-fighter. He was followed by State Insurance Commissioner James D. Barry, who preceded his address with several humorous stories. Mr. Barry spoke on the enormous loss due to fires and urged greater attention to proper prevention measures. Chief Humphrey, of Pittsburg, and Chief Knoffloch, of Mansfield, O., were called upon to speak for the firemen. Friday afternoon the visiting chiefs had the privilege of attending either the theaters or the ball game. Grand Rapids and Chief Lemoine proved delightful hosts.

**American Association of Park Superintendents.**—The eleventh annual convention of the association was called to order in the Chamber of Commerce rooms, Seattle, Wash., August 9. President John F. Duncan, Superintendent of the Boston Parks, introduced Mayor John F. Miller, who welcomed the members. The Mayor was followed by E. C. Cheasty, President of the Seattle Park Board. E. F. Blaine, who was introduced as the father of the Seattle park system, expressed the wish that the guests would make any suggestions that might occur to them that would be of benefit to the Seattle parks. C. M. Loring, Minneapolis, Minn., and Christopher Clark, Northampton, Mass., were made life members. The report of Secretary F. L. Mulford was read by William S. Manning, Baltimore. W. R. Adams, Omaha, Neb., read a paper on "The Duties of Park Superintendents." Conditions in the Yellowstone National Park, recently toured by the association, was roundly criticised in an informal way. The thick underbrush and dead and down timber every-

where visible throughout the park, they declared, constantly invites a disastrous conflagration. It was suggested that the delegates submit in writing their views on park conditions with the idea of in that way bringing the situation to the attention of the proper Federal authorities. Officers were elected as follows: President, W. S. Manning, Baltimore; vice-presidents, G. A. Parker, Hartford, Conn.; James Wilson, Toronto, Canada; E. T. Miche, Portland; John J. Morley, Los Angeles; M. H. West, Chicago; William J. Zartman, Brooklyn, N. Y.; secretary and treasurer, F. L. Mulford, Harrisburg, Pa. Harrisburg was selected as the next meeting place. As a result of the suggestion made earlier in the week by E. F. Blaine, father of the Seattle park system, that the association should go on record in that regard, a resolution was adopted indorsing civic centers as a general proposition both from the practical and the aesthetic standpoint. The resolution favors the grouping of public and quasi-public buildings on an open plaza. Mr. Blaine had expressed the hope that the association would point out to this city the need of a civic center, proper land and sea approaches and the co-ordination of the business streets with the park system. Interesting papers were also read on the "Standardizing of Park Reports," by E. T. Miche, of Portland, and "Street Tree Planting," by G. Champion, of Winnipeg, Man. Mr. Miche contended that if one harmonious standard could be agreed on for park reports generally, the bulletins sent out from the different system would be much more intelligible and instructive.

**New England Water Works Association.**—The twenty-eighth annual convention of the New England Water Works Association will be held in New York City on the 8th, 9th and 10th of September, with headquarters at the Park Avenue Hotel, where, according to an announcement made by Fred N. Whitcomb, chairman Exhibit Committee, address care A. P. Smith Mfg. Co., Newark, N. J., exceptional advantages will be offered manufacturers for exhibiting. The attendance at the last New York convention of the association was the largest in its history, undoubtedly due to the efforts of the associate members. It is hoped that all associate members will co-operate with the committee in making the exhibit feature of the convention a pronounced success. Those making application at once for amount of space desired, together with a statement of the character of their display, will greatly facilitate the work of the committee.

**League of Cities of the Third Class in Pennsylvania.**—On September 1, 2 and 3 the tenth annual convention of the League of Cities of the Third Class in Pennsylvania will be held in the City Hall, New Castle, Lawrence County, and a very entertaining programme has been prepared. The sessions of Wednesday morning will be given over to the reception of the delegates; the organization of the convention; the address of welcome by Mayor Lusk, with a response by City Solicitor F. P. Cummings, of Williamsport; the preparation of the roll of delegates, and the introduction of the reports of the secretary, treasurer and executive committee. On the afternoon of the same day the report of the law committee will be submitted by its chairman, J. A. Gardner, City Solicitor of New Castle.

There will be two topics presented for discussion. D. S. Seitz, City Solicitor of Harrisburg, will address the delegates on "What Can Be Done Toward Procuring the Necessary Legislation to Regulate Public Utility Corporations and Procure the Taxation of Their Real Estate for Local Purposes." F. P. Shoemaker, City Solicitor of Bradford, will present the topic "The Best Method for the Regulation of Public Utilities." General discussion will follow the presentation of all topics. At 4 o'clock the Fire Department of New Castle will be inspected and reviewed, followed by a ride through the city. In the evening the topic "Bonding of Cities" will be presented by City Solicitor A. A. Cochran, of Chester. The day will conclude with a reception to the delegates at the club. The convention will begin its work on Thursday morning, and the first topic to be presented will be "Sewage Disposal," by T. Herbert Snow, Chief Engineer, State Department of Health, Harrisburg. The second will be talked on by the Rev. A. B. McCormick, of New Castle, who will speak on "Municipal Playgrounds." Le Grand Powers, Chief Statistician of the Department of Commerce and Labor, Washington, D. C., will tell of "Municipal Accounting," and John H. Bigelow, Hazleton's City Solicitor, will speak of "Municipal Regulation of Coal Mining so as to Prevent the Settling of the Surface." In the afternoon three topics will be presented: "Government by Commission," by A. M. Fuller, Meadville; "Better Administration of Cities," Dr. Edward W. Bemis, Superintendent of the City Water Department of Cleveland, and "Municipal Regulation of Saloons with Reference to Their Being Closed During Certain Hours of the Night," by Thomas C. Hare, City Solicitor of Altoona. In the evening there will be a banquet tendered the delegates at Cascade Park. On Friday there will be but one session, that of the morning. At this the next place of meeting and the election of officers will take place, and one subject will come up for discussion, "Municipal Charter Making," by Clinton Rogers Woodruff, Secretary of the National Municipal League, Philadelphia.

**Michigan Electric Association.**—Managers and superintendents of nearly all the municipal and privately owned electric lighting and power plants in Michigan met at Hotel Fuller, Detroit, August 18, for the sixth annual convention of the association.

**Convention of Milk Dealers.**—An innovation in the nature of a tuberculosis exhibit will be attempted by H. E. Barnard, Chief of the Food and Drug Department of the Indiana Board of Health, who will have charge of the convention of market milk and butter men, which has been called to meet at the State House, Indianapolis, Ind., September 7 and 8. With the consent of the State Board of Agriculture, Mr. Barnard will place on exhibition at the State Fair Ground the carcass of a tuberculous cow as an object lesson to the milk and butter men of what may be the condition of a tuberculous animal, while appearing in normal condition in life. The following persons have accepted invitations to speak to the convention: Dr. Mazyck P. Ravel, of the University of Wisconsin; W. N. F. Evans, Health Commissioner of Chicago, who has been active in obtaining better milk conditions in that

city; Ivan C. Weld, of the Bureau of Animal Industry, of the Department of Market Milk, Department of Agriculture, Washington, D. C.; John Prescott, of Indianapolis, formerly Market Milk Inspector in Massachusetts and Connecticut, and John Owens, one of the Inspectors of the Indiana State Board of Health, who will use some new lantern slides in showing dairy conditions as he has found them in Indiana.

### Calendar of Meetings

August 24.  
**Association of State and National Dairy and Food Departments.**—Convention, Denver, Col.

August 25-27.  
**League of American Municipalities.**—Thirteenth Annual Convention, Montreal, P. Q., Canada.—John MacVicar, Secretary, Des Moines, Ia.

August 25-27.  
**Virginia State Firemen's Association.**—Convention and Tournament.—G. C. Cumming, Secretary, Portsmouth, Va.

August 31-September 2.  
**Association of Edison Illuminating Companies.**—Annual meeting, Briarcliff Manor, N. Y.—D. L. Huntington, Secretary, Spokane, Wash.

September 1.  
**New York State Association of Police Chiefs.**—Annual Convention, New York, N. Y.

September 1-3.  
**League of Third-Class Cities of Pennsylvania.**—Annual convention, New Castle, Pa.—Mayor D. M. Johnson, Secretary, Chester, Pa.

September 7-10.  
**Pacific Coast Association of Fire Chiefs.**—Convention, Seattle, Wash.—W. H. Bringhurst, Secretary, Seattle, Wash.

September 8-10.  
**New England Water Works Association.**—Annual convention, New York City.—Willard Kent, Secretary, Narragansett Pier, R. I.

September 9.  
**New Jersey State Firemen's Association.**—Convention, Atlantic City, N. J.—William Exall, Secretary, 86 Bruce street, Newark, N. J.

September 9.  
**New Jersey Patrolmen's Benevolent Association.**—Convention, Paterson, N. J.—Henry W. Weller, President, Newark, N. J.

September 14-16.  
**International Association of Municipal Electricians.**—Annual convention, Atlantic City, N. J.—F. P. Foster, Secretary, Corning, N. Y.

September 14-17.  
**Michigan Gas Association.**—Annual meeting, Detroit, Mich.—A. P. Ewing, Secretary, Detroit, Mich.

September 15-17.  
**Massachusetts State Firemen's Association.**—Convention, Plymouth, Mass.—D. Arthur Burt, Secretary, Taunton, Mass.

September 29.  
**New Hampshire State Firemen's Association.**—Convention, Woodsville, N. H.—George L. Osgood, Secretary, Concord, N. H.

September 29-30.  
**Ohio Fire Chiefs' Association.**—Convention, Alliance, O.—D. K. Mosher, Secretary, Warren, O.

October 4-8.  
**American Street and Interurban Railway Association.**—Annual convention, Denver, Col.—B. S. Swenson, Secretary, 29 W. 39th St., New York, N. Y.

October 7.  
**League of Virginia Municipalities.**—Fourth annual meeting, Staunton.—J. Davis Reed, Portsmouth, President; L. C. Brinson, Portsmouth, Secretary.

October 19-22.  
**American Public Health Association.**—Annual convention, Richmond, Va.—Charles O. Probst, Secretary, Columbus, O.

October 20.  
**American Gas Institute.**—Annual meeting, Detroit, Mich.—A. B. Beadle, Secretary, 29 W. 39th St., New York, N. Y.

November 3.  
**Lakes-to-Gulf Deep Waterway Convention.**—Convention, New Orleans, La.

November 9-11.  
**American Society of Municipal Improvements.**—Annual convention, Little Rock, Ark.—A. Prescott Folwell, Secretary, 241 W. 39th St., New York, N. Y.

November 15-19.  
**National Municipal League.**—Annual meeting, Cincinnati, O.—Clinton Rogers Woodruff, Secretary, 705 North American Building, Philadelphia, Pa.

### TRADE NOTES

**Cast-Iron Pipe.**—Chicago: The season for municipal contracts is about over, but foundries are well booked with contracts and the condition of trade is considered as very satisfactory. Quotations: 4-inch, \$27.50; 6 to 12-inch, \$26.50; 16-inch and up, \$25.50. Birmingham: Conditions are considered as sufficiently encouraging to warrant preparations for additional capacity. Quotations: 4 to 6-inch, \$26; 8 to 12-inch, \$25; over 12-inch, average \$24. New York: Quotations: 6-inch, carload lots, at tidewater, \$23.50.

**Lead.**—The market has been firm, especially on future deliveries, for which buyers were willing to pay a premium above the price of 4.40c., which is maintained by the leading producers. The London market named an advance, quoting £12 10s. Sales made at the New York Metal Exchange were as follows: 200,000 lb. September delivery at 4.45c.; 200,000 lb. October delivery at 4.47 1/2c. The price quoted for East St. Louis delivery was 4.25c. bid.

**Auto-engine Exhibits.**—An auto-fire engine, manufactured by the American Motor Fire Apparatus Company, Pittsburgh, Pa., gave an exhibition in New Castle, Pa., August 14. Four lines of hose were laid on the Diamond and four streams of water were sent over the Hoyt Block. The engine is a six-cylinder, 110 horsepower, with two sets of clutches. When the machine is stopped, by pulling a lever, the engine is thrown on the pump, giving a pressure, it is claimed, of 60 pounds on each of the four streams.

**Smoke Prevented.**—The G. H. Scharf Company, Ypsilanti, Mich., has installed one of their smoke preventing devices in the Oliver Hotel, South Bend, Ind., under a guarantee to abate 90 per cent. of the smoke and save not less than 10 per cent. of the fuel, to do away with soot and increase the efficiency of the boiler using it from 10 to 15 per cent. The installation is a direct result of the agitation started by the Chamber of Commerce to make South Bend a practically smokeless city. The Scharf system consists of a machine automatic in its operation injecting steam and air into the fire. This is said to combine with the hydro-carbon gases, forming a water gas which will burn at a lower temperature than the original hydrocarbons.

**Water Works Supplies.**—Under the caption "The Round-Up," the H. Mueller Mfg. Company, Decatur, Ill., issues a booklet summing up their list of supplies, such as tapping machines, brass goods and tools, in order that water works men whose season's work is planned and under way may choose what they require to finish their work. The list includes tapping machines with standard or optional equipment, corporation stop cocks, brass water connections, wiped joint goose necks, lead flange work tested to 200 pounds hydraulic pressure, ground key cast cocks, check valves and pipe jointers, water and gas main calking sets, water meter testers, derricks and pipe tongs.

**Critchfield Asphalt Case Settled.**—The claim of the United States & Venezuela Company, one of the five American claims against the Government of Venezuela, dispute over which led to the rupture of diplomatic relations between the two countries 16 months ago, has been settled out of court. Minister W. W. Russell has ca-

bled the State Department that the Venezuelan authorities have signed a protocol whereby their Government is to pay to the United States & Venezuela Company \$475,000 in recompense for the expenditures made in the development of concessions granted in 1901 by the Castro Government.

**Asphalt in Oklahoma.**—Prof. L. L. Hutchinson, Assistant Director of Geology connected with the State Normal at Norman, Okla., has been investigating the asphaltum fields in the vicinity of Atoka, and has covered the territory carefully from Atoka to the Jumbo asphalt mine. He reports finding of the most attractive formation he has ever located in the State of Oklahoma. He says that the outcroppings and excavations of the liquid asphalt make the best showing in the State, and recommends extensive developments along this line in the territory twenty miles square, covering the Potapo Creek and McGee Valleys.

**Anti-Corrosion Metal.**—The Stark Rolling Mill Company, Canton, O., are manufacturers of an anti-corrosion rust-resisting metal called "Toncan Metal." It has been subjected to severe accelerated corrosion tests held in accordance with rigid specifications laid down by the American Society for Testing Materials, and has proven to corrode much less than either charcoal iron, wrought iron or steel sheets. The manufacturers claim that for work where black or galvanized sheets of charcoal iron or steel are used Toncan Metal can be used with the assurance of greatly increased rust-resisting qualities, and hence much longer life and much less cost in the long run. Toncan Metal is more easily worked and cheaper than charcoal iron. It stands bending, seaming and deep stamping fully as well as open hearth or any steel. It not only combines durability and ductility, but has also a fair degree of tensile strength.

**Bond Engraving.**—The Security Bank Note Company, 223 Chestnut street, Philadelphia, Pa., issues a booklet calling attention to careless methods frequently employed in the issue of securities, and stating the advantages of its methods. Besides the abundant opportunity for error in the preparation and execution, the prevailing lack of method is almost an invitation to the unscrupulous to duplicate parts of an entire issue. The adequate remedy lies in the engraving by a responsible bank note company from steel plates producing the best workmanship and giving absolute security during the different stages of the preparation, as well as exercising a careful guardianship over the engravings afterward, to prevent either plates or impressions falling into improper hands. The Security Bank Note Company offers to submit a model or pencil sketch giving an idea of the finished work, with estimates of cost to anyone who will supply the proper data. A still better way is to send a copy of the bond drawn up by legal counsel in exactly the wording desired, so that they may know accurately the amount of reading matter the paper is to contain. No obligation is incurred on the part of the contemplated customer. The preliminary sketch will facilitate the delivery of the engraved work when the order is definitely placed. By having the general style of display lettering, lathe work, borders and vignettes decided in advance a great saving in time can be effected.

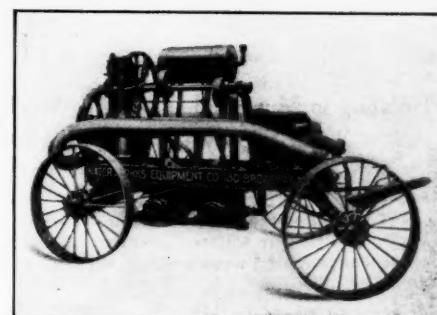
## MUNICIPAL APPLIANCES

### Tricar Fire Fighter

THE Fire Department of Birkenhead, England, has adopted the N. S. U. tricar as a fire fighting apparatus. It not only carries two men, but a surprising amount of fire fighting apparatus, including ladders, hatchets, extinguishers and a large quantity of hose, and in the brief time that it has been in service has proved itself capable of coping with vigorous conflagrations without aid from the large engines. Always ready to start at a moment's notice, and capable of high speed, it accords with the most advanced ideas of handling the fire problem, in that it arrives on

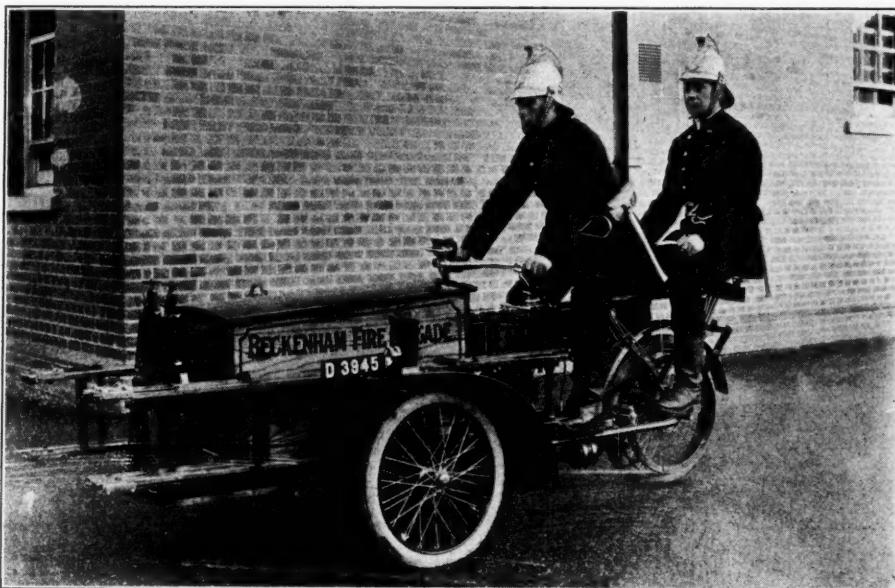
lengthwise of the wagon, on which eccentrics operating rods to the pumps are placed.

Water for cooling the engine is supplied by a tank held in position by straps. Under the driver's seat is a box for tools, and it also contains the ignition battery. Wires leading to the battery are protected from injury by the iron pipes through which they pass. Two 20-foot lengths of suction hose with couplings and strainers go with each outfit. Side supports are provided to carry these when not in use. The manufacturers state that these outfits will handle any quantity of water up to their full capacity, containing sand, gravel or sewage, which is liquid



PORTABLE PUMPING OUTFIT

1½ gallons of gasoline was consumed. The pumps are capable of an extreme lift of 28 feet, and the outfit weighs 3,400 pounds. It has the advantage of all gasoline outfits in not requiring the constant attention of an engineer.



Courtesy of Bicycling World

N. S. U. TRICAR FIRE APPARATUS.

the scene of action while the blaze is young, and, by extinguishing the small fires, makes the larger ones impossible. Recent as has been its installation, the tricar in use has turned out over 100 times on alarm, and in every case has arrived without a hitch and in the shortest possible time. The firemen themselves had a large hand in the construction of the complete outfit, which has been termed a "first aid" fire brigade.

The accompanying illustration shows the apparatus as equipped for fire service in England. The machine is equipped with N. S. U. two-speed gear and fire engine, which permits low-powered machines to take any hill, and also makes it easier to start with a heavy load. From four to six horse-power machines are recommended for this use. Wheels are 24 x 2½-inch, with first-class Peter Union tires, heavily spoked, forty to each wheel.

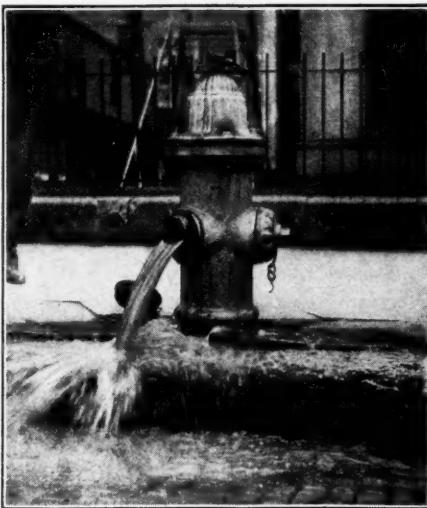
### Portable Gasoline Pump

THE Water Works Equipment Company, 50 Church street, New York, N. Y., has placed on the market a portable gasoline pumping outfit, for which patents are pending. The apparatus is placed on a wagon body, consisting of a steel frame with wide tired iron wheels, and is drawn by two horses. Two No. 4 Edson diaphragm trench pumps, nominal capacity 6,000 gallons per hour each, are located in the center of the truck below the frame. A Fairbanks vertical gasoline engine, 5½-horsepower, is set on the frame at the rear. Power is transmitted through gears to a horizontal shaft running

enough to flow, and they are specially recommended for pumping sewers and keeping trenches and foundations dry. A comparison between the work that can be done by hand pumps and with this outfit is made as follows: The best that four men can do with a No. 4 hand pump in one hour is 4,000 gallons. At a recent test in Trenton, N. J., made in the presence of City Engineer Abram Swan, Jr., and Alvin Bugbee, Superintendent of Water Works, one of these outfits pumped 14,500 gallons per hour against a head of 18 feet. During the five hours in which the test was made

The machines they sell are covered by U. S. Letters Patent No. 894,220, and are sold with a guarantee of efficiency. The machines are made in sizes from 4 in. to 48 in. The company will make demonstrations of the efficiency of their machines under agreement with prospective customers before selling.

The Whitney Pipe Cleaning Company cleaned for the Cincinnati Water Department 30,000 lin. ft. of cast iron pipe, ranging in size from 6 in. to 20 in. in diameter. Some results obtained in Louisville, Ky., were as follows: Pearl street pipe line, efficiency increased 654 per cent.; Second street, 300 per cent.; Fifth street, 350 per cent.; Rogers, Baxter and Overhill, 85 per cent.; East street, 100 per cent.



BEFORE CLEANING MAIN



AFTER CLEANING MAIN

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

## BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
New York	New York	Aug. 26, 3 p.m.	Block asphalt paving bridge over N. Y., N. H. & H. R.R., Bronx	Henry Smith, Pres. Park Board.
W. Virginia	Middlebourne	Aug. 26	Paving 1 mile of S. & S. turnpike, including curbing.	J. W. Duty, Clk. County Court.
Ohio	Steubenville	Aug. 26, noon	Macadamizing, sewerizing, grading Bloomfield and Fairplay Turnpike road, 2 sections, 17,545 ft.; also Reed's Mills-Bloomfield road, 4 sections, 23,248 ft. long.	J. L. Copeland, Chm. Co. Comrs.
Maryland	Ft. Howard	Aug. 27	Constructing 15,000 sq. ft. of granitoid sidewalk.	Maj. C. C. Bolton, U. S. A., Baltimore
Ohio	Cincinnati	Aug. 27, noon	Improving Springfield Pike in Wyoming village; bond, \$3,000.	Stanley Struble, Pres. Bd. Co. Comrs.
New York	Albany	Aug. 27, 1 p.m.	Repair and resurfacing of State roads in 7 Counties.	S. Percy Hooker, Chm. Hwy. Com.
Ohio	Youngstown	Aug. 27	Paving portion of 2 streets, repaving 1 street.	W. H. McMillan, Clk. Bd. Pub. Serv.
Dist. Columbia	Washington	Aug. 28, noon	Laying 10,000 sq. yds. of cement sidewalks.	Captain Kelly, Act. Engr. Comr.
Illinois	Chicago	Aug. 28	Paving with No. 2 granite blocks on concrete, subways under C. & A.R.R. at Ashland ave., furnishing No. 2 granite block and improving brick block Fulton St., 2,000 sq. yds.	John J. Hanberg, Com. Pub. Wks.
Ohio	Cleveland	Aug. 28, 11 a.m.	Furnishing material for repair of Wooster Pike and Lorain road, grading, draining, etc., Kinsman road, Newburg twp.	Wm. F. Black, Clk. County Comrs.
Virginia	Norfolk	Aug. 28, 12:30 p.m.	Furn. about 8,500 tons granite paving block, 10,000 ft. granite curb and 14 sets of corners.	Board of Control.
Indiana	Rushville	Aug. 30, 2 p.m.	Constructing 3 miles of macadamized roads on County line.	Stewart & Kennedy, Engineers.
Maryland	Ft. Howard	Aug. 30	Constructing 15,000 sq. ft. granolithic sidewalks.	Maj. C. C. Ballou, Q.M.
Maine	Portland	Aug. 30	Paving 2,683 ft. State road with macadam, bituminous macadam surface or Hassam pavement.	Bion Bradbury, Jr. Comr. Pub. Wks.
Pennsylvania	Lancaster	Aug. 30	Bldg. 10,147 ft. road in Manheim twp.	J. W. Hunter, St. Hwy. Com'r., Harrisburg.
Pennsylvania	Latrobe	Aug. 30, 7:30 p.m.	Brick paving, 8,400 sq. yds.; conc. curb, 5,860 ft.; exc., 4,900 yds	E. M. Eaton, Boro. Secretary.
Virginia	Richmond	Aug. 30	Constructing 30 miles of gravel road in Greenesville County.	P. St. J. Wilson, State Hwy. Comr.
Ohio	Newark	Aug. 31	Brick or asphalt paving, 19,557 sq. yds. and 10,000 ft. curb.	C. H. Wells, City Engineer
New York	Hornell	Aug. 31, 3 p.m.	Brick or block paving, 10,013 sq. yds., 3 sts.; 6,135 lin. ft. curb; excav., 3,946 cu. yds.; also bldg. retaining wall.	A. F. Bannon, Jr., Supt. Pub. Wks.
New Jersey	Elizabeth	Sept. 1	Paving 4,890 sq. yds. with Belgian block on sand base.	N. K. Thompson, Street Comr.
New York	Brooklyn	Sept. 1, 11 a.m.	Asphalt and block repairing in concrete, cement walks.	Bird S. Coler, Boro. President.
Pennsylvania	Washington	Sept. 1, noon	Brick roads 3 miles, macadam 6 miles.	H. R. Campbell, Ch. Clk. Co. Comrs.
Oklahoma	El Reno	Sept. 1	Brick paving, 1,187 sq. yds.; asphalt, 4,713 sq. yds.; excav., 966 yds.; embankment, 176 yds., on Rock Island ave.	F. T. Stackpole, City Clerk.
Indiana	Hartford City	Sept. 1, noon	Grading, draining, stone wearing surface, 20,975 ft. road.	L. W. Daugherty, County Auditor.
New Jersey	New Brunswick	Sept. 2	Bldg. stone road for County; M. F. Larson Co. Engr., Perth Am.	Frank H. Pownall, Dir. Freeholders.
New York	Brooklyn	Sept. 2, 3 p.m.	Resurfacing with asphalt old walks in Ft. Green Park.	Henry Smith, Pres. Park Board.
Ohio	Akron	Sept. 2, 11 a.m.	Grading and macadamizing 1 mile of road in Portage twp.	Charles L. Wirth, Clk. Co. Comrs.
Ohio	Upper Sandusky	Sept. 2, noon	Grading and stoning road 9,215 ft. long in 2 townships.	J. N. Traxler, County Auditor.
Pennsylvania	Toledo	Sept. 2, 10 a.m.	Repairing roads in Oregon and Adams townships.	D. T. Davies, Jr., County Auditor.
New York	Gallitzin	Sept. 2	Brick paving 8,500 sq. yds.	D. W. Dillman, Boro. Engineer.
Pennsylvania	Albany	Sept. 2, 1 p.m.	Repair or resurfacing State roads in Dela. and Chemung counties	S. Percy Hooker, Chm. St. Hwy. Com.
Pennsylvania	North Braddock	Sept. 3, 3 p.m.	Grading, curbing, paving, 3 sts. and one alley.	C. E. Stewart, Boro. Engineer.
Connecticut	New Haven	Sept. 3	Paving 3 sts. with crushed stone and tar dressing; portion of Congress st. with shale blocks and part with wood block.	Public Comm. on Pavements.
Ohio	Columbus	Sept. 4, noon	Macadamizing 7 miles, Hess pike, 2 townships.	Walter Braun, County Surveyor.
Indiana	Terre Haute	Sept. 4, 11 a.m.	Grading, and graveling Flagg road 1 1/2 miles and Felling road, 1 mile.	N. G. Wallace, County Auditor.
Indiana	Delphi	Sept. 6	Bldg. macadam road in Jackson and one in Burlington twp.	M. G. Hann, County Au't.
Indiana	Knox	Sept. 6	Bldg. gravel road in Wayne and one in Roach twp.	Lee M. Ransbottom, Co. Auditor.
Indiana	Greencastle	Sept. 6	Bldg. 2 1/2 miles macadam road in Floyd township.	D. V. Moffet, County Auditor.
Indiana	Scottsburg	Sept. 6	Bldg. 2 miles gravel road in Finley twp.; cost, \$4,238.60.	Board of Commissioners Scott Co.
Indiana	Tipton	Sept. 6, 10 a.m.	Bldg. Edw. Curran et al gravel road, 3,948 ft. long.	J. F. Barlow, County Auditor.
Mississippi	Vicksburg	Sept. 6, 8 p.m.	Paving Cherry st. with any hard material, sewers, etc.	J. J. Hayes, Mayor.
Indiana	Shelbyville	Sept. 6, 1 p.m.	Constructing a gravel road in Liberty township.	G. B. Hunter, County Auditor.
Indiana	Vernon	Sept. 6, 11 a.m.	Constructing 2.5 miles pike road in Rigger township.	T. L. Thomas, County Auditor.
Minnesota	St. Paul	Sept. 7, 10 a.m.	Grading Larpenteur avenue.	E. G. Krahmer, County Auditor.
Indiana	Fowler	Sept. 7, 1 p.m.	Constructing, etc., 10 roads; cost, \$52,000.	Lemuel Shipman, County Auditor.
Indiana	Vincennes	Sept. 7, 2 p.m.	Bldg. 10,520 ft. gravel road in Vigo township.	John T. Scott, County Auditor.
Indiana	Williamsport	Sept. 7, 1 p.m.	Bldg. gravel road between Adams and Pine twps., 10,550 ft. long.	Robert L. Winks, County Auditor.
Indiana	Hartford City	Sept. 7	Grading, draining, 20,975 lin. ft. road.	L. W. Dougherty, County Auditor.
Indiana	Peru	Sept. 7	Grading, gravel, bldg. bridges, etc., roads Nos. 2 and 3, Erie twp.	R. H. Hicks, City Clerk.
Mississippi	Greenwood	Sept. 7, 8 p.m.	Bldg. about 5 miles of concrete sidewalks.	Lloyd Thompson, Town Clerk.
New Jersey	Westfield	Sept. 7, 8:15 p.m.	Improving Prospect st. from Broad st. to Dudley ave.	T. E. Reese, County Auditor.
Indiana	Winamac	Sept. 8	Bldg. gravel road between 3 townships.	Board of County Commissioners.
Indiana	Muncie	Sept. 8	Bldg. 2 stone roads in Nile and 3 in Union twp.; also gravel road.	O. D. Garrett, County Auditor.
Indiana	Bluffton	Sept. 8	Bldg. 3 stone roads in 3 townships.	Hazlehurst & Anderson, Engrs., Candler Bldg., Atlanta.
Georgia	Griffin	Sept. 8, 1 p.m.	Brick, wood block, granitoid or bitulithic paving, 32,241 sq. yds. on concrete; 14,589 lin. ft. granite curb; grading, etc.	Board of County Commissioners.
Florida	Pensacola	Sept. 8	Two miles vit. brick paving, etc., on 2 County roads.	G. L. McLane, City Engineer.
Kansas	Hutchinson	Sept. 8, 3 p.m.	Paving 36,000 sq. yds. brick, one year guarantee, bitulithic or creosoted blocks; 10-year guarantee; also 7,000 lin. ft. curb and gutter.	E. D. Rightmire, County Auditor.
New Jersey	Atlantic City	Sept. 8	Grading and paving Shore road from Absecon br. to New Jersey avenue, Som. Pt.	Jos. W. Hunter, State Hwy. Comr.
Pennsylvania	Harrisburg	Sept. 8	Bldg. 3 sections National road, 16,990 ft. long.	Jos. W. Hunter, State Hwy. Comr.
Pennsylvania	Harrisburg	Sept. 9	Bldg. 2 sections National road, 5,100 ft. and 7,911 ft. long.	Constructing Quartermaster.
New York	Fort Totten	Sept. 10, 11 a.m.	Macadam roads, 667 sq. yds.; concrete walk, 5,000 sq. ft.; drain, 665 lin. ft.; excav., 2,644 cu. yds.	Horace Blakely, County Auditor.
Indiana	Bloomington	Sept. 10	Constructing 3 gravel roads in Bloomington twp.	Fred. Drehs, Clk. County Comrs.
Ohio	Cincinnati	Sept. 10, noon	Oiling Reading pike, Sycamore township.	J. K. P. Wallace, Supt. Co. Const.
Tennessee	Knoxville	Sept. 15, noon	Constructing 35 miles of pike road in Anderson Co.	
SEWERAGE				
Florida	Gainesville	Aug. 26, noon	Furn. material and bldg. 1,600 ft. 8-in. sanitary sewer.	W. W. Hampton, Sec'y Bd. Pub. Wks.
New York	New York	Aug. 26, 3 p.m.	Furn. 30 c. i. heads, inc. gratings and 30 c. i. heads or traps.	Henry Smith, Pres. Park Board.
New Jersey	Bordentown	Aug. 27, 8 p.m.	Bldg. 2 sections, 9 miles 8 to 15-in. pipe sewer and appurtenances; disposal works, inc. sand filters, sludge and flood basins, rein. concrete chambers and contact beds.	W. W. Young, C.E., c. o. Sewer Com.
Kentucky	Louisville	Aug. 27, noon	Bldg. So. Louisville sewer, Branch-Section C, Cont. No. 51: 1,800 ft. 9.5 ft., 3,051 ft. 5.5 rein. concrete sewer, inc. 3,850 cu. yds. concrete and 350,000 lbs. steel rein. bars; average cut, 20 ft.	W. C. Nones, Chm. Sewer Com.
Illinois	Sterling	Aug. 27	Bldg. brick outlet sewer and pipe sewer.	C. E. Sheldon, Secy. Bd. Loc. Impvt.
Ohio	Columbus	Aug. 30	Bldg. sewers in Haviland ave. and several alleys.	E. W. Hirsch, Secy. Bd. Pub. Serv.
Nebraska	Norfolk	Aug. 30, noon	Bldg. Sewer Dists. 13 and 15, 1 1/2 blocks each.	Mayor and City Council.

## SEWERAGE.—Continued.

Dist. Columbia.	Washington	Aug. 30, noon	Constructing service sewers	Chief Clerk, Dist. Engr. Dept.
New Jersey.	Westfield	Aug. 30, 8:15 p.m.	Bldg. sanitary sewers and appurtenances	Lloyd Thompson, Town Clerk.
New York.	Fort H. G. Wright	Aug. 30, 10 a.m.	Bldg. 2,485 ft. 6-in. sewer and 1,300 ft. 6-in. water extension	Capt. Chas. T. Baker, Q.M., U. S. A.
Florida.	Pensacola	Aug. 30, noon	Making and repairing 45,000 lin. ft. sewer and 10,000 ft. gas and water connections of abutting property	L. G. Aymard, Clk. Bd. Pub. Wks.
Texas.	Houston	Aug. 30, noon	Bldg. 320 ft. 24-in.; 5,749 ft., 15-in.; 557 ft., 12-in. and 2,576 ft. 8-in. pipe sewers with manholes, Ys, etc.	H. B. Rice, Mayor.
Wisconsin.	Appleton	Aug. 31, 4 p.m.	Material and labor for bldg. sewers in 3 sts. and ravine	E. L. Williams, City Clerk.
Maryland.	Baltimore	Sept. 1, 11 a.m.	Building Forest Park Sewerage Work, Sanitary Contract 40; trunk sewers in Dist. 48, Cont. 41; Jones Falls interceptor, Sec. 1, Cont. 42; lateral sewer in Dist. 49, Cont. 43; bldg. storm drains, Cont. 8	
Arkansas.	Rogers	Sept. 1, 3 p.m.	Furnishing material and constructing sewers: 30,000 ft. 8-in., 1,700 ft. 10-in., 3,000 ft. 12-in. pipe sewers; septic tank, etc.	C. W. Hendrick, Ch. Engr. Sew. Com.
Maine.	West Pownal	Sept. 1	1,685 ft. 8-in. pipe sewer, manholes and settlement tank	M. A. Earl & Co., Muskogee, Ar.
Oklahoma.	El Reno	Sept. 1	Constructing nine blocks of storm sewer on 4 streets	Dr. Geo. S. Bliss, Supt. Maine Schools
Wisconsin.	Portage	Sept. 1, noon	Bldg. sanitary sewer system; 66,574 ft. vit. pipe, 96 concrete manholes, 50 lampholes, inverted siphon and sewage disposal plant	F. T. Stackpole, City Clerk.
New Jersey.	Elizabeth	Sept. 1	Bldg. 2,685 ft. 15, 12, 10 in. and 2,016 ft. 6-in. pipe sewers, etc.	M. J. Downey, Mayor.
New York.	Syracuse	Sept. 1	Furnishing 18 regulating valves	N. K. Thompson, Street Comr.
Kentucky.	Louisville	Sept. 3, noon	Bldg. Dumesnil st. sewer; Contract No. 52	H. J. Hamlin, Secy. Int. Sewer Bd.
Mississippi.	Greenwood	Sept. 6	Galv. steel culvert pipes, 14, 16, 18-in. gauge; sizes 12-36 inch	J. B. F. Breed, Ch. Engr., Sewer Com
Mississippi.	Vicksburg	Sept. 6, 8 p.m.	Constructing storm sewer, etc., in Cherry st.; C. R. Twiss, C.E.	C. W. Crockett, Chancery Clerk.
New Jersey.	Irvington	Sept. 7	Constructing sewers in several streets	J. J. Hayes, Mayor.
Ohio.	Columbus	Sept. 8	Bldg. sewers and drains in State University grounds	Geo. M. Wills, Chm. Town Council.

## WATER SUPPLY

Pennsylvania.	Lancaster	Aug. 26	Bldg. concrete dam across Conestoga river at water works	J. H. Rathfon, City Controller.
Minnesota.	Taylor	Aug. 27, 4 p.m.	Bldg. concrete reservoir, pump. station, etc.; cost, \$25,000.	C. D. Christenson, Village Clerk, Village Council.
Minnesota.	Biwabik	Aug. 28	Bldg. 125,000-gal. cypress tank on steel tower	L. G. Aymard, Clk. Bd. Pub. Wks.
Florida.	Pensacola	Aug. 30, noon	Water and gas connections, 10,000 ft.; sewer, 45,000 ft.	Capt. H. B. Chamberlain, Q. M.
Alabama.	Ft. Morgan	Aug. 30, 1:30 p.m.	Sinking 6-in. tubular well at fort	Capt. Chas. T. Baker, Q. M., U. S. A.
New York.	Fort H. G. Wright	Aug. 30, 10 a.m.	Bldg. 1,300 ft. 6-in. water main; 2,485 ft. 6-in. sewer	A. Kempf, City Clerk.
Iowa.	Monticello	Aug. 30, 8 p.m.	Bldg. rein. concrete add. 35-ft. high, 53 ft. diam. to reservoir	Capt. E. C. Long, Q. M., U. S. A.
Washington.	Fort Casey	Aug. 31, 11 a.m.	Constructing addition to water supply system	A. Harry Clayton, Clk. Boro. Council.
Pennsylvania.	Doylestown	Sept. 1	Constructing reinforced concrete reservoir	I. B. Tice, Clk. Bd. Water Comrs.
New Jersey.	Perth Amboy	Sept. 1, 8:30 p.m.	Furn. and erecting 12,000,000-gal. pumping engine	H. F. Chester, Town Clerk, Cleve-land P. O.
Ohio.	Brooklyn Hts.	Sept. 2, noon	Material and labor for laying water mains in 4 streets	R. L. Carlock, Chm. Bd. Loc. Impvts. Sam T. Honeycutt, Clk. Co. Comrs.
Illinois.	Bloomington	Sept. 2, 2 p.m.	Constructing water mains in portions of various streets	J. J. Hayes, Mayor.
North Carolina.	Smithfield	Sept. 6	Constructing system of water works for Court House and jail	J. R. Palmer, Town Recorder.
Mississippi.	Vicksburg	Sept. 6, 8 p.m.	Laying water main in Cherry st.; C. R. Twiss, City Engineer	
Colorado.	Hot Sulphur Spgs	Sept. 7	Constructing complete system of water works	
Oklahoma.	Henryetta	Sept. 9, 8 p.m.	Furn. 700 tons c. i. pipe and specials, 4-10-in.; 102 double nozzle fire hydrants; valves and valve boxes; labor and material for laying 9 miles of pipe	
Oklahoma.	Hartshorne	Sept. 13, 8 p.m.	Constructing water works system	
Michigan.	Detroit	Sept. 14, noon	Three 30,000,000-gal. pumping engines at new station	
Quebec.	Montreal	Sept. 14, noon	Widening and deepening city aqueduct, 27,300 ft. long, inc. 1,175,000 cu. yds. earth and 400,000 cu. yds. rock excav., also formation of slopes and banks of new aqueduct, bldg. siphon culverts, dry stone wall lining in slopes, etc.	
Illinois.	Rock Island	Sept. 30	Bldg. new filter plant on bluff site	George Janin, Supt. Water Works.
				M. T. Rudgren, City Clerk.

## BRIDGES

Pennsylvania.	Altoona	Aug. 27	Bldg. 3 bridges, readvertisement; over Canoe Creek at E. E. Bräu's; over Piney Creek, at Royer, Taylor Twp., and over Halter Creek, at Albrights	W. H. Hinkle, Co. Engr.
Indiana.	Peru	Aug. 27	Bldg. bridge in Pipe Creek and repair 2 in Perry township	Charles Griswold, County Auditor.
Ohio.	Cincinnati	Aug. 27, noon	Bldg. bridge over Taylor's Creek, Breene township	Stanley Struble, Pres. Co. Comrs.
Virginia.	Richmond	Aug. 28	Bldg. 2 steel bridges 546 and 577 ft. long over Shen. riv., Page Co	P. St. J. Wilson, State Hwy. Comr.
Indiana.	Salem	Aug. 28, 1:30 p.m.	Bldg. steel bridge 50x14 ft. and 65 ft. steel span with 14-ft. roadway over Blue river in Polk twp.	Sam G. Ellis, County Auditor.
Pennsylvania.	Lewiston	Aug. 28	Bldg. concrete arch bridge over Honey Creek, near H. C. Station; two 46-ft. arches in clear with 16-ft. clear roadway	J. H. Close, Chm. Co. Comrs.
New Jersey.	Elizabeth	Aug. 30	Constructing hwy. bridge over Rahway river, Cranford	Jacob L. Bauer, County Engineer.
Ohio.	Mt. Vernon	Aug. 30, noon	Bldg. new bridge in Butler twp., near Zuch; cost, \$12,000	Board of County Commissioners.
Ohio.	Bowling Green	Aug. 30, noon	Bldg. sub. and superstructure of bridge 95 ft. long with 16-ft. roadway, Webster twp.; plans also on superstructure	Board Commissioners Morrow Co.
Maine.	Augusta	Aug. 30, 11 a.m.	Bldg. bridge over Aroostook riv. in Masardis, one-span 216 ft. long, inc. 418 cu. yds. masonry; sep. bids; also two 170 ft. spans and 450 cu. yds. masonry separately, for bridge over east branch of Penobscot in Medway	Paul D. Sargent, State Hwy. Comr.
Virginia.	Altavista	Aug. 31	Bldg. sub. and superstructure bridge 450 ft. long over river	Altavista Land & Impvt. Co.
Minnesota.	Minneapolis	Sept. 1	Furn. designs, detail plans, etc., for several bridges; 3 prizes	Board of Park Commissioners.
Pennsylvania.	Philadelphia	Sept. 1, noon	Contract No. 37, signal bridges, Green to Norris streets	W. Hunter, Ch. Engr., P. & R. Ry. Co.
Ohio.	Sandusky	Sept. 3, 1:30 p.m.	Bldg. 30-ft. span arch bridge, 80 ft. wide; entire or sub. and super., over Pike Creek in Perkins township	Board of County Commissioners.
Iowa.	Council Bluffs	Sept. 6	Bldg. concrete arch at 8th st., concrete slab and girder bridge at Benton st.; cost, \$16,000	A. W. Casady, City Clerk.
Illinois.	Streator	Sept. 6, 7 p.m.	Erecting reinforced concrete bridge over Vermillion river	John B. Patterson, City Clerk.
Indiana.	Shelbyville	Sept. 6	Bldg. 10 new concrete arch culverts in 5 townships	Bd. Comrs., Shelby County.
Virginia.	Wytheville	Sept. 6	Bldg. bridge over Reed Creek, 1 1/2 miles south over creek	John B. Hurt, County Clerk.
Mississippi.	Greenwood	Sept. 6	Bridge and fill. work, inc. 4 bridges, 220, 75, 100, 75 ft. long	C. W. Crockett, Clk. Co. Supervisors
Arizona.	Phoenix	Sept. 7, 2 p.m.	Designs, plans, etc., for bridge over Salt river; \$5,000 prize	Bd. Supervisors of Maricopa Co.
Ohio.	Fostoria	Sept. 7, noon	Bldg. rein. concrete bridge over Portage Creek in Vine st.	John A. Sutton, County Auditor.
Indiana.	Brazil	Sept. 7	Constructing 50-ft. steel bridge	J. L. Burnes, County Auditor.
Ohio.	Oliversburg	Sept. 7	Bldg. 72-ft. concrete bridge over Whetstone Creek	Geo. H. Weidner, County Auditor.
South Dakota.	Clear Lake	Sept. 7, 2 p.m.	Bldg. 24 ft. steel bridge, cement foundation; also 24 ft. wood	G. E. Force, County Auditor.
California.	Pala	Sept. 8, 2 p.m.	Furn. material and labor for bldg. bridge over San Luis Ry. river	Philip T. Lonergan, Supt. U. S. Reservation.
Ohio.	Columbus	Sept. 10	Bldg. sub. and superstructure and approaches of Bishop Run bridge; also rein. concrete arch culvert	F. M. Sayre, County Auditor.
Idaho.	Springston	Sept. 14	Constructing a trestle for Kootenai County	County Surveyor.
California.	Merced	Sept. 21, 10 a.m.	Constructing steel bridge over Merced river	P. J. Thornton, Clk. Bd. Co. Supervs.

## LIGHTING AND POWER

Minnesota.	Tyler	Aug. 27, 4 p.m.	Bldg. electric light plant and imp. w. w., inc. brick bldg., machinery to generate 65 horse-power; cost, \$25,000	Oscar Claussen, St. Paul, C. E.
Ohio.	Fayette	Aug. 28	Bldg. electric light plant; village will contract to furnish not less than twenty 2,000 c. p. street lamps	C. H. House, Village Clerk.
Florida.	Pensacola	Aug. 30, noon	Gas and water connections, 10,000 ft.; sewer con., 45,000 ft.	L. G. Aymard, Clk. Bd. Pub. Wks.
Missouri.	Monett	Sept. 1, 8 p.m.	Material and labor for complete electric light plant for city; Corliss engine dir. con. to a.c. generator with apparatus; switchboard, arc regulators, arc lamps, poles, wire, tungsten lamps, complete; 3 tubular boilers, stack, feed pump, feed water heater	
Ohio.	Delaware	Sept. 2, noon	Bldg. brick addition to power house at Girls' Ind. Home	Perry Short, Mayor.
New Jersey.	Irvington	Sept. 7	Bids, inc. plans, etc., for municipal electric light plant	S. D. Webb, Secy. Bd. Trustees.
Ohio.	Columbus	Sept. 9	Bldg. brick power plant for State institutions; cost, \$200,000	Geo. M. Wills, Chm. Town Council.
Pennsylvania.	Pittsburg	Sept. 15, noon	Furn. and install. air compressor plant, Lock 1, Monon. riv.	Osborn Eng. Co., c. o. Bd. Prison M'rs.
New Jersey.	Orange	Sept. 20	Bldg. municipal electric light plant, inc. two 160 kw. generators; 13-section switchboard, condenser, steam piping, 365 magnetic lamps, 65 60-watt Tungstens; alternate bids; underground, \$76,000; overhead, \$65,000; Runyon & Carey, Consulting Engineers	H. C. Newcomer, Maj. U. S. Engrs.
				Arthur B Seymour, Mayor.

## LIGHTING AND POWER—Continued

Ontario..... Toronto..... Oct. 14, noon..... Furn. four 1,500, four 500 and two 225 h.p. synchronous motors; also two 1,500 and four 500 h.p. induction motors, with exciters, switchboards, connecting material, etc.....

Indiana..... New Albany..... Oct. 20..... Lighting by electricity streets, alleys by electricity for 10 years from Sept. 1, 1910; \$10,000 check with each bid.....

City Engineer.

John C. Short, City Clerk.

## MISCELLANEOUS

New York..... New York..... Aug. 26, 3 p.m..... Furn. and del. 10,000 lin. ft. 3-pipe iron fence for Bronx Park... Earth excav., 400 cu. yds.; 1,900 ft. trench to lay pipes; 29 catch basins, 700 cu. yds. gravel; 170 sq. yds. vit. brick gutters, 600 sq. yds. granolithic walks; 1,900 cu. yds. loan, for Charles River Basin Comm.....

Indiana..... Indianapolis..... Aug. 27..... Removing ashes from flat bldgs. to Oct. 1, 1918.....

Minnesota..... Duluth..... Aug. 27, 2 p.m..... Furnishing first-size steam fire engine.....

Massachusetts..... Boston..... Aug. 28..... Bldg. ship, dredging and new docking pier 8, Navy Yard; \$50,000

Texas..... Galveston..... Aug. 30, 3 p.m..... Excav. 450,000 cu. yds. of material and cleaning and grubbing 67 acres of bayou timber; R. W. Luttrell, Engr.....

Illinois..... Chicago..... Sept. 1, noon..... Reconstructing La Salle st. tunnel, inc. removal of present tunnel, etc., and bldg. rein. concrete tunnel, 39 ft. wide, 2,000 ft. long, excav. from st. grade to 60 ft. below; also bldg. concrete horse shoe tunnel 10x11 ft. diameter, 700 ft. long, with 2 vertical shafts, 10 ft. diameter, 90 ft. deep; 290 ft. in river section.....

New Jersey..... Hoboken..... Sept. 2, 9:30 a.m..... Erecting bldg. as children's recreation center.....

Georgia..... Fairburn..... Sept. 3..... Grading Fairburn & Atlanta Elec. R.R. from Stonewall.....

Ohio..... Akron..... Sept. 10, 11 a.m..... Bldg. tuberculosis hosp.; admin. bldg., dining room, kitchen.....

Florida..... Ft. McRee..... Sept. 10 1 p.m..... Constructing seawall at Fort McRee.....

Pennsylvania..... Oil City..... Sept. 13, 7:30 p.m..... Furn. auto. fire truck, running gear only.....

Illinois..... Chicago..... Sept. 15..... Furn. voting machines up to \$400,000 value.....

Texas..... Galveston..... Sept. 15, noon..... Furn. and delivering creosoted material and lumber for improving Galv. Ship Channel and Buffalo Bayou.....

Massachusetts..... Lawrence..... Sept. 17, 3 p.m..... Bldg. fire station at Oxford and Lowell sts.; 2 story, 3-run, brick, stone, iron and wood; cost, \$20,000.....

Kentucky..... Guthrie..... Oct. 1..... Furn. and erecting 15-ton ice plant for Todd Co. Ice and El. Co. ....

Henry Smith, Pres. Park Board.

H. A. Miller, C. E., Chas. Riv. Comm. Board of Public Works.

Board of Fire Commissioners.

Navy Department, Washington, D.C.

B. E. Johnson, Sec'y Drainage District No. 1.

Bion J. Arnold, Chm. Bd. Rys. Co. Bd. of Playground Comrs.

L. W. &amp; C. S. Roberts, Engrs.

City Clerk.

Capt. H. B. Ferguson, U. S. Engrs.

C. W. Mullalley, City Controller.

Election Commissioners.

John C. Oakes, Capt. U. S. Engrs.

C. J. Corcoran, City Clerk.

L. M. Balle, Sec'y Ice &amp; Light Co.

## STREET IMPROVEMENTS

**Birmingham, Ala.**—Council has decided to pave five streets.—H. E. Shropshire, Jr., City Clerk.

**Decatur, Ala.**—New Decatur will pave Sherman st. with tar macadam; distance ten squares.—W. A. McCalla, City Engineer.

**Mobile, Ala.**—Board of Public Works will improve four streets; \$90,000 bonds will be issued.—P. J. Lyons, Mayor.

**Tuscumbia, Ala.**—Colbert County Commissioners' Court has appropriated \$9,000 for county roads.

**Hot Springs, Ark.**—The county is considering building of about 16 miles of roads in Garland and building an automobile road between this city and Little Rock. T. P. Farmer is interested.

**Pine Bluff, Ark.**—City will pave two streets; cost about \$90,000; brick or bituminous will be used.—W. N. Trulock, Commissioner.

**Merced, Cal.**—County Supervisors have called election for September 18 on \$745,000 bonds for highway improvement; proposal contemplates improvement of 242 miles of road and expenditure of \$300,000 for bridges and culverts; plans for the road work were prepared by a Commission appointed for that purpose.

**Oakland, Cal.**—Council has passed ordinance appropriating \$5,000 for paving of streets.

**San Diego, Cal.**—Plans are being prepared for paving H st.; cost \$31,766; concrete culverts will be constructed at cost of \$2,575.

**San Leandro, Cal.**—Alameda County Board of Supervisors is considering a \$2,000,000 bond issue for good roads.

**Willimantic, Conn.**—Plans and specifications are being prepared for construction of sidewalk system.

**Bradenton, Fla.**—Bids will be received Sept. 6 for \$250,000 bonds, for construction of county roads.—R. H. Rauch, Clerk Circuit Court.

**Green Cove Springs, Fla.**—Local Roads District has voted special tax levy for constructing improved roads.—P. J. Canova, Superintendent of Streets.

**Atlanta, Ga.**—General Council has ordered sidewalks on six streets.

**East St. Louis, Ill.**—Bids will be received in October for \$147,000 street improvement bonds.—W. J. Crocken, City Engineer.

**Marshall, Ill.**—Bids will be received about Sept. 15 for nearly twelve and a half miles of brick paving.—W. R. Paige, Arcade Bldg., Terre Haute, Ind., Engineer.

**Pekin, Ill.**—Board of Public Works will soon advertise for bids on laying 11,620 yds. of brick pavement.—W. J. Conzel, President.

**Pekin, Ill.**—Board of Local Improvements has decided to pave three additional streets.

**Peoria, Ill.**—City is considering paving with brick and asphalt portions of several streets.—George Simmons, President Board of Public Works.

**Quincy, Ill.**—Council has passed ordinances providing for paving about 23,437 sq. yds. brick block paving and 11,128 ft. sandstone curb, asphalt fill; cost \$47,489.—F. L. Hancock, City Engineer.

**Rock Island, Ill.**—Council is considering improvement of Lincoln Court Drive; cost \$3,497.70.

**Springfield, Ill.**—Board of Public Works is considering laying of 5,000 yds. of brick pavement.—J. E. Snepp, President.

**Columbus, Ind.**—Citizens of Hartsville and vicinity are seeking to have four steep hills leading into Hartsville cut down; three or four streets of the town are to be improved with crushed stone.

**Fort Wayne, Ind.**—City Park Board is considering matter of treating boulevards at Swinney park with crude oil.

**Indianapolis, Ind.**—Board of Public Works has rejected all bids opened for paving a portion of Kentucky ave.

**Indianapolis, Ind.**—Board of Works has adopted resolutions for improvement of fourteen streets; has ordered plans for Washington boulevard.

**Portland, Ind.**—Council is considering ordinance appropriating \$15,000 for city asphalt repair plant.

**River Park, Ind.**—Board of Trustees are considering improvement of Mishawaka ave.—W. C. Rogers, Clerk.

**Fort Riley, Kan.**—County will construct a macadam road from this place to Junction City.

**Hutchinson, Kan.**—City will lay about 75,000 sq. ft. of sidewalk.—C. W. Oswald, Commissioner.

**Leavenworth, Kan.**—Board of Commissioners has decided to pave Vine st.—J. D. Kirmeyer, City Clerk.

**Baltimore, Md.**—Mayor J. B. Mahool has signed grade crossing ordinance; four bridges will be completed by August 16, 1914.

**Baltimore, Md.**—Maryland Geological Survey has asked for bids for improvement of part of Washington road lying in Baltimore county with tarred macadam; also bids for paving Columbia ave. with vitrified brick and sheet asphalt; \$74,000 is available.

**Boston, Mass.**—Street Department will construct two highways in Brighton and two in Dorchester.—G. C. Emerson, Superintendent of Streets.

**Lawrence, Mass.**—Grade Crossing Committee will visit five cities in order to inspect grade crossings abolished by Boston & Maine Railroad; same methods will be adopted for this city.—Hugo Bell, Chairman.

**Chisholm, Minn.**—Township is considering building of road to Wilpin.

**Duluth, Minn.**—City Engineer has estimated cost of paving 20th ave. E. with tar macadam at \$7,061, and Peabody st. at \$17,647; 1st ave. E. will be paved with sandstone block at \$16,834.

**Mankato, Minn.**—Bids will soon be received by Board of Public Works for constructing one mile of cement curb and gutter; also one mile of tar and macadam pavement.—J. N. Day, President.

**Minneapolis, Minn.**—Plans of Milwaukee road for the elimination of grade crossings throughout South Minneapolis will be submitted to Council Special Committee very soon.

**Bayonne, N. J.**—Council has approved plans for improvement of four streets.—F. W. Dalrymple, City Engineer.

**Belleville, N. J.**—For second time, Belleville Board of Education has rejected bids

for grading land in locality of Joralemon st. school; action was taken because proposals were considered too high; there are about 1,800 cubic yards to be graded and lowest bid amounted to about \$1,500.

**Gloucester City, N. J.**—Council has passed ordinance authorizing \$75,000 bond issue for improvement of streets.—R. A. Lincoln, Mayor.

**Jersey City, N. J.**—Street and Water Board has passed resolution asking Board of Finance to appropriate \$18,600 to enable the city to repave South st. with wooden blocks.

**Brockport, N. Y.**—The State road between this town and Sunnyside Beach will be repaired; \$8,900 is available.

**Rensselaer, N. Y.**—Council will pave Harrison ave. and 2d st.

**Syracuse, N. Y.**—Division Engineer F. W. Barr, State Department of Highways, has received plans for eight miles of county roads and nine miles of State roads to be constructed in Onondaga county next year.

**Fayetteville, N. C.**—City has decided to pave Person st. with macadam paving.

**Akron, O.**—Richfield Township will petition for paved roadway from this city to Cuyahoga County line.

**Akron, O.**—Ordinance issuing bonds approximating \$11,855 has been introduced in Council by R. A. Myers for improvement of Cuyahoga, Maple and Broad sts. and the repairing of the West Market st. bridge and sidewalk.

**Akron, O.**—Petition for paved road between Akron and Cleveland by way of Hudson has been filed with County Commissioners; it provides for road paved with brick to the North Summit line.

**Alliance, O.**—City has voted \$75,000 bonds to repave Main st., build one viaduct and two subways under Pennsylvania tracks; \$10,000 bond issue for extension of West Broadway was defeated.

**Celina, O.**—Bids will be received August 23, 10 a. m., for ditching, grading, graveling or macadamizing 9,789 ft. on the Lengers road.—L. L. Marsh, County Engineer.

**Cleveland, O.**—County Engineer Lea has estimated cost of improvement of St. Clair road at \$125,800.

**Findlay, O.**—Hardin County has awarded \$2,390 pike bonds to Breed & Harrison, Cincinnati, at \$544.50 premium.

**Ironton, O.**—City is considering improvement of Rome alley; also has adopted resolution for widening Spring st. by constructing a concrete retaining wall.

**Medina, O.**—Township has sold \$18,000 road bonds to Ohio Farmers' Insurance Co., Leroy, for \$435 premium.

**Minerva, O.**—Council has passed ordinance for constructing sidewalks along Grant st.

**Richwood, O.**—Council has passed a resolution for paving West ave.; will advertise for bids for new sidewalks on five streets.

**Steubenville, O.**—County Engineer J. L. Cox is asking the Commissioners to allow him to construct on most traveled roads brick paving on a plan devised by him to demonstrate that brick roads are cheaper than macadam in long run; road devised will be 16 ft. wide with 9 ft. of brick paving in the center and 3 1/2 ft. of concrete paving on each side; cost \$11,870 per mile.

**Steubenville, O.**—National Exchange Bank has secured \$21,000 Bloomfield and Reeds Mills pike bonds at premium of \$775.

**Elk City, Okla.**—Town will at once lay seven blocks of asphalt; plans are being prepared for 27; Ardmore asphalt is favored.

**Guthrie, Okla.**—Bids have been ordered advertised on 40 blocks of asphalt paving in residence districts to take place of single course brick pavement ordered during Barnes regime against wishes of property holders.

**Tulsa, Okla.**—County will vote October 12 on \$700,000 bonds for roads, bridges, City Hall and Court House.

**Portland, Ore.**—Sandy road will be widened and paved.

**The Dalles, Ore.**—Council has passed paving ordinance providing for the paving of 2d st. with bitulithic pavement; estimated cost to abutting property-owners will be \$41,398.55, or not more than \$2.03 per sq. yd.

**Berlin, Pa.**—Citizens are urging the paving of streets.

**Chester, Pa.**—Street Committee is receiving bids, readvertisement, for paving 10th and 11th sts.

**Dale, Pa.**—Bids will be received September 1, 8 p. m., for \$4,000 street improvement bonds.—W. H. Tream, Borough Treasurer.

**McKeesport, Pa.**—City will pave Walnut st. with brick on concrete foundation; cost \$9,000.—J. W. Smith, Engineer.

**Philadelphia, Pa.**—City has sold \$7,239,700 municipal bonds; Drexels and Brown Bros. city, were awarded the \$1,300,000 grade crossing loan.

**Pottstown, Pa.**—Council has authorized \$25,000 bond issue to provide funds for street paving under frontage tax plan.

**West Hazleton, Pa.**—Council is considering paving of Broad st.; cost \$18,000.

**Aberdeen, S. D.**—Council is considering paving ten blocks west of Main st.; also paving Kline st.; distance eight blocks.

**Knoxville, Tenn.**—Anderson County pike bonds, \$100,000, have been sold to W. H. Goss, President Knoxville Bank and Trust Co.

**Knoxville, Tenn.**—J. W. Flenniken, Chairman Board of Public Works, has advertised for bids for 70 pieces of sidewalk.

**Brady, Tex.**—Commissioners' Court is considering election on \$40,000 road and bridge bonds.

**Dallas, Tex.**—Board of Municipal Engineers has readvertised for bids for paving eight streets.—J. M. Bassett, Chief Engineer.

**Dallas, Tex.**—City Engineer J. M. Preston has submitted to Commissioner Doran the approximate costs of the permanent street paving, which will be done this year, including the Elm st. and East Side ave. storm sewers, as follows: Cedar Springs ave., paving \$21,200, bridge over Turtle Creek on this street \$5,500; East Side ave., paving \$9,895, East Side ave. storm sewer \$500; Elm street, paving \$12,026, Elm st. storm sewer \$20,000; Prather st., paving \$792; Jackson st. Santa Fe to Jefferson, \$2,300; Poydras, Commerce to Wood st., \$3,600; Jackson, Harwood to Pearl, \$1,685; Austin, Pacific to Commerce st., \$3,325; Lane, Commerce to Jackson, \$748; Harwood, Commerce to Jackson, \$748; Kendall, Commerce to Jackson, \$335; Jackson, Santa Fe to Harwood st., \$6,425; Harwood, Commerce to Cedar Springs, \$15,171. Total \$108,815.

**Luray, Va.**—Owners of New Market and Sperryville Turnpike will begin reconstruction of pike at early date; bridge will be constructed over Shenandoah River.

**Norfolk, Va.**—Mayor J. G. Riddick has approved ordinances appropriating \$600 for improvement of Fayette st., \$2,878 for Poplar ave., and \$3,075 for Chestnut and Payne sts., Beverly.

**Richmond, Va.**—State has had surveys made for 600 miles of good roads in 65 counties in this State.—P. St. J. Wilson, State Highway Commissioner.

**Puyallup, Wash.**—Board of Trade is considering purchase of a grader for improvement of county road.

**Tacoma, Wash.**—Council has decided to improve North Tacoma and five other streets.—L. W. Kays, City Clerk.

**Tacoma, Wash.**—Council has adopted ordinance for improvement of Spokane st.—L. W. Roys, City Clerk.

**Cameron, W. Va.**—Council Commissioners are considering paving three miles of road.

**Boscobel, Wis.**—City will advertise for bids for building cement walks.

**Beloit, Wis.**—Council has ordered brick pavements on St. Lawrence ave.

**Madison, Wis.**—Flans have been prepared for improvement of East Washington ave.

**Milwaukee, Wis.**—Bids will be received by Milwaukee County Board of Commissioners for improving the Janesville plank road; cost \$10,000.—A. F. Hirst, State Highway Engineer.

**Racine, Wis.**—Council has passed ordinance for paving 5th st. with brick.

**Alexandria, Ont., Can.**—City will call for new tenders for constructing 3,000 ft. of 5-ft. granolithic walk.—E. Perrault, Civil Engineer, Ottawa.

## STREET IMPROVEMENTS SEWERAGE

**Huntsville, Ala.**—The Metropolitan Engineering and Construction Co. has secured contract for paving Madison st.; paving is to be of mineral rubber asphalt and will cost close to \$40,000.

**Fresno, Cal.**—The Worswick Street Paving Co. has secured contract for paving with asphalt a portion of K st.; cost about \$6,250.

**Los Angeles, Cal.**—The Board of Supervisors August 3 awarded contract for grading, macadamizing Sunset and Wilshire boulevards to Doran, Brouse & Price, city, for \$8,525.

**Vallejo, Cal.**—Dunlevy & Lynch have been awarded a contract for repairing paved streets.

**New Britain, Conn.**—A. C. Sternberg, of West Hartford, has secured contract for macadamizing the Plainville road; cost about \$7,000.

**Washington, D. C.**—Bids were received as follows August 14 by the District Commissioners for laying cement sidewalks: Thos. R. Reilly & Co., Class A, \$1.12 per sq. yd.; B, \$1.12. James W. Bean, A, \$1.09; B, \$1.34. R. J. Beall Construction Co., A, \$1.045; B, \$1.225. Cranford Paving Co., A, 94.75c.; B, \$1.20. Lake Stone Co., A, 98c.; B, \$1.18. Also for crushing stone for filling in canal: Warren F. Brenizer Co., 93c. per cu. yd.; Cranford Paving Co., 80c.; all local bidders.

**Atlanta, Ga.**—Following are bids opened August 9 for paving Decatur st., about 22,000 sq. yds., creosoted wood block on 6-in. concrete foundation, price given per sq. yd.: Milner Sons Co., Louisville, Ky., \$3.15; Crockett Paving Co., Selma, Ala., \$2.81; F. J. Meadow, Jr., Atlanta, \$3.03 1/2; B. Somers Co., Atlanta, \$2.74; U. S. Wood Preserving Co., New York, N. Y., \$2.64; Georgia Granite Co., Atlanta, \$2.51, and S. H. Venable, Atlanta, \$2,499.—R. M. Clayton, City Engineer.

**Anderson, Ind.**—Contract has been let by County Commissioners for improvement by grading and graveling a half mile of Nichol ave.

**Elkhart, Ind.**—Proposals for the paving of Franklin st. from 2d to Marion st. and from Marion to Indiana ave. and of Johnson ave., Front st. and Edwardsburg ave. from Lexington to Beardsley ave. were received by the Board of Public Works. There were four bids each for the two Franklin st. contracts, those on the west end being for both asphalt and brick and brick and asphalt combined, and one, the east end, for asphalt alone, either sheet or block. Two bids were received for Tarvia macadam on Johnson ave., Front st. and Edwardsburg ave.

Following are the bids on Franklin st. from 2d to Marion:

H. P. Stryker Co., of Toledo—Trinidad asphalt, \$1.99 per sq. yd.; California Obispo asphalt, \$1.85; curb and gutter, 45c. per lin. ft.; curb, 45c.; gutter, 45c.; headers, 25c.; catchbasins, \$40; manholes, \$40; inlets, \$15; total on Trinidad, \$29,769.95; on Obispo, \$27,999.65.

S. S. Saxton Co., of Chicago and Richmond—"Any kind of asphalt acceptable to the Board," \$1.85; curb and gutter, 43c.; curb, 30c.; gutter, 30c.; headers, 40c.; catchbasins, \$30; manholes, \$30; inlets, \$30; total, \$27,900.58.

Andrews Asphalt Paving Co., of Hamilton, O.—Trinidad asphalt, \$1.94; Obispo, \$1.56; asphalt block, \$2.05; curb and gutter, 44c.; curb, 44c.; gutter, 44c.; headers, 30c.; catchbasins, \$30; manholes, \$40; inlets, \$15; resetting old manholes, \$5; sidewalks, 8c. a sq. ft.; totals, not including sidewalks, Trinidad, \$28,899.78; Obispo, \$24,094.68; asphalt block, \$30,290.73.

Peters Bros. Co., of Chicago—Obispo, \$1.79; curb and gutter, 42c.; curb, 22c.; gutter, 20c.; headers, 20c.; catchbasins, \$45; manholes, \$25; inlets, \$22; to bring catchbasins to line, \$3; total, \$26,852.99.

The City Engineer's estimate for this part of the improvement, for bitulithic, was \$30,700.50.

Bids for West Part of Franklin: Rankert & Co., of Mishawaka—Metropolitan block, \$1.98; Nelsonville block, \$1.98; Indiana block, \$1.98; 60c. a sq. yd. extra for the car track; asphalt filler, 10c. extra per sq. yd.; curb and gutter, 48c.; curb, 32c.; gutter, 50c.; headers, 40c.; catchbasins, \$50; manholes, \$50; inlets, \$50; total, without filler, including street car track, \$26,488.56; with filler, \$27,503.76.

Peters Bros. Co.—Obispo, \$1.79; if car tracks are included, \$2.29 for brick and \$2.30 for asphalt; curb and gutter, 42c.; curb, 22c.; gutter, 20c.; headers, 20c.; catchbasins, \$45; manholes, \$25; inlets, \$22; total, entire, tracks and all, with asphalt, \$23,222.89; for asphalt outside and brick between tracks, \$23,176.14.

S. S. Saxton Co.—Asphalt, outside tracks, \$1.85; brick, between tracks, \$2.45; no offer for brick outside tracks; curb and gutter,

43c.; curb, 30c.; gutter, 30c.; headers, 40c.; catchbasins, \$30; manholes, \$30; inlets, \$30; total, for asphalt outside and brick between tracks, \$23,435.82.

Cain Construction Co., of Gary—Metropolitan block, outside tracks, \$1.96; inside, \$2.50; curb and gutter, 48c.; curb, 40c.; gutter, 40c.; headers, 40c.; catchbasins, \$40; manholes, \$4; (none on street); inlets, \$45; total, \$25,333.94.

The Engineer's estimate on bitulithic was \$26,908.15; his estimate for the entire street on bitulithic was \$57,608.65, or about \$6,825 more than brick or asphalt was expected to cost.

Bids for Johnson ave., Front st. and Edwardsburg ave. were asked for Tarvia-filled macadam, the only material asked by the property owners. The bids were as follows:

H. G. Meyrick & Co.—\$1.06 per sq. yd.; curb and gutter, 44c.; curb, 30c.; gutter, 30c.; headers, 30c.; catchbasins, \$50; manholes, \$135; inlets, \$30; total, \$21,526.48.

Rankert & Co.—\$1.15; curb and gutter, 45c.; curb, 30c.; gutter, 40c.; headers, 40c.; catchbasins, \$46; manholes, \$50; inlets, \$30; 12-in. pipe, 80c. per ft.; 10-in., 65c.; total, \$23,068.55. The Engineer's estimate was \$23,904.52.

No action will be taken on the bids within ten days, exclusive of Sunday, within which time property owners may designate their choice of material.

**Fort Wayne, Ind.**—Oscar F. Menefee was awarded contract for grading and sidewalk work on High st. from the Feeder additon to Runnion ave., at \$1.42 1/2 a running foot.

**Goodland, Ind.**—Contracts have been awarded for constructing roads as follows: Wildasin and McGraw roads to Conover & Tabor for \$9,598; Constable road to H. A. Barnes & Son, \$2,750; Henderson and Shepard roads to W. F. Smith & Co., \$10,080; and Gemmell road to W. T. McCray, \$2,353.

**Indianapolis, Ind.**—The following bids were received August 13 for laying a wooden block pavement on Central ave. from Highland drive to 38th st.: John E. Sullivan, \$6.08 per lin. ft.; Marion County Construction Co., \$6.15 per lin. ft.

**Indianapolis, Ind.**—Following are the low bids received by the Board of Public Works, Elaine H. Miller, City Engineer:

Delaware st. from 30th to 32d sts., J. E. Sullivan; wooden block, \$3.86; J. E. Sullivan asphalt, \$3.49; J. E. Sullivan, brick, \$3.30; Hoosier Construction Co., bitulithic, \$3.88.

Bismarck ave. from Morris to Howard sts., grading and graveling roadway, J. Harry Roberts, 36c.

South side of 32d st. from Central to College ave., cement walks, A. D. Bowen, 43c.

Ruckle st. from 33d to 34th sts., J. E. Sullivan, wooden block, \$3.96; A. D. Bowen, brick, \$3.33 1/3; J. E. Sullivan, asphalt, \$3.57; Hoosier Construction Co., bitulithic, \$4.20.

Dearborn st. from 25th to 30th sts., grading and graveling roadway, J. Harry Roberts, 52 1/2c.

First alley east of Pennsylvania st. from alley north of 16th st. to 19th st., J. E. Sullivan, brick, \$1.47; Hoosier Construction Co., asphalt, \$2.17; bitulithic, \$2.02.

**Council Bluffs, Ia.**—James P. Wickham, the Miracle Concrete Corporation, Minneapolis, Minn., and Peter Nelson have been awarded contracts for 500,000 sq. ft. sidewalk construction; the total work amounts to about \$47,840.40; Nelson bid 8.5c. per sq. ft., the other bidders 9c.

**Des Moines, Ia.**—Bryant, Ford & McLoughlin, Waterloo, have secured contract for paving with sheet asphalt West 42d and Clark sts.

**Baltimore, Md.**—The bids for paving Auchentoroly terrace from Orem to Mondawin ave. and Mondawin ave. from Reisterstown road to Auchentoroly terrace, were opened by the Board of Awards and the bids referred for tabulation to the Commissioners for Opening Streets. The lowest bid was for sheet asphalt, made by the Filbert Paving and Construction Co., of Philadelphia, \$1.74 a sq. yd.; prices have been running as high as \$2.25 and \$2.30 during the last few years.

**Baltimore, Md.**—Bids were opened by the State Roads Commission August 16 for the improvement of the Westport road and for several miles of highways in Washington, Howard and Queen Anne's counties. Specifications for the Westport road provided for vitrified brick for 3,400 ft. and tar macadam, 18-ft. wide, for the remainder of the two miles for which bids were asked. Contractors estimated very closely, as the following figures indicate: M. A. Talbott Co., \$78,146.69; F. W. Staley, \$77,720.16; P. F. Leddington, \$77,214.30.

The lowest bidders for the other work were as follows: Washington county, east and west from Clear Springs, 4.29 miles, C. P. Waller, \$44,839.80; Howard county, from West Friendship toward Sykesville, 3.21 miles, M. J. Grove, \$35,594; Queen Anne's

treville, 3.14 miles, McCormick & Co., \$31,586.07; same county, from Chester River toward Church Hill, three miles, F. M. Latham, \$26,252.10.

**Brookline, Mass.**—The following bids have been received for paving the Village Square: T. J. Kelly, \$36,640; D. F. O'Connell, \$29,485.80; J. H. Cowing, \$29,484; J. H. Ferguson, \$29,406; James Driscoll & Sons, \$29,245; John McCourt, \$28,842; Simpson Bros. Corporation, \$28,178.60; Worcester Paving Co., \$27,570.60; Coffin & Shields, \$27,481; John E. Burns, \$26,826.60, and B. F. Carroll & Co., \$26,144.

**Eckford, Mich.**—Township Boards of Eckford and Marengo have awarded contracts for constructing about two miles of macadam roads to Consolidated Stone and Gravel Co., of Detroit, at \$8,311.

**Grand Rapids, Minn.**—Bernard S. Andrus, representing the Rudolph S. Blome Co., was awarded the contract for paving 3d ave. and is getting the work started.

**Virginia, Minn.**—Contract for curb and gutter work on four avenues has been awarded to the H. L. Bartlett Co., for \$5,726.30; the Mirabo Engineering Co. bid \$7,931.30.

**Rockport, Miss.**—Contracts for constructing county roads were awarded as follows: Roads in District No. 1, C. I. Allen, at \$33 per mile; District No. 2, R. T. Bailey, at \$26.97; District No. 3, J. D. & R. N. Barksdale, at \$28; District No. 4, N. E. Mephisto, at \$46 per mile for first-class roads and \$34 per mile for second-class roads; District No. 5, T. J. Wallace, at \$35 per mile.

**Wesson, Miss.**—The contract for maintaining and keeping in good repair the public roads in district No. 2 of this county was awarded to Mr. Bally by the Board of Supervisors for \$26.50 per mile by the year; about \$4,700 will be the total amount received by the contractor per annum, he having under his supervision probably 155 miles of road.

**Kansas City, Mo.**—W. K. Latimer has secured contract for grading a portion of Sheley Lane at \$3,123, and Colyer Bros. three miles from Greenwood east at \$6,275; also Oak Grove at Lone Jack Roads to Geo. W. Shaw at \$8,600.

**St. Louis, Mo.**—The Board of Public Improvements August 10 awarded contracts for paving as follows: Wm. R. Bush Construction Co., 211 North 7th st., Potomac, 15th st., Iowa, Oregon and Jefferson aves., with brick, for \$135,368; Skrainka Construction Co., 319 North 4th st., with brick, Penrose st., \$5,964; Fruin-Culnon Contracting Co., Lacled Bldg., Dodridge st., Horton and Maple pl., Etzel, Baden aves., \$18,876; Webb-Kunze Construction Co., Juniata st., Wells and McCausland aves. and Blendon pl., \$66,288; Pas. T. McMahon, Warne ave. and 19th st., for \$17,216; Granite Bituminous Paving Co., Olive st., \$9,741, and G. Eyermann & Bros., 1216 Grand ave., for Jefferson ave., at \$23,069.

**Missoula, Mont.**—Judge J. M. Evans, Clerk for the School Board, opened bids for cement sidewalks around the county high school building; some time ago the Board awarded the contract for the work without competition to the Miracle-Tripp Concrete Co., of Helena, at a bid of 18½c. a lin. ft., but protect followed from local contractors with the result that the bids were called for and were as follows: Beacon & Johnson, of Missoula, 16c.; H. L. Bayes, city, 17c.; Miracle-Tripp Co., Helena, 18c.; Ingstrom & Co., city, 18c.; J. E. Wilson, city, 17½c.; M. Germaine, city, 16c., and Zemser & Bradley, city, 15c.

**Carson City, Nev.**—Contract for delivering f.o.b cars Carson City 10-ton road roller, bids opened August 6, has been awarded to A. L. Young Machinery Co., 26-28 Fremont st., San Francisco, Cal., for \$3,650.—F. Patterson, County Clerk.

**Morristown, N. J.**—Bids were opened August 2 by the Board of Freeholders for constructing State aid roads and contracts have been awarded as follows: For paving Morris Plains and Parsippany road with Amesite, to B. M. Shanley's Sons Co., of Newark, for \$32,432; for Gladstone and Chester road of Amesite, to A. C. Denchan & Co., Inc., of Trenton, for \$40,174, and for Pompton and Newark turnpike of Macadam with asphalt binder, to Colfax & Steele, of Pompton, for \$17,432.—Gustave A. Becker, Chairman.

**Morristown, N. J.**—The contract for paving of Washington st. with brick has been awarded to the New Jersey Paving Corporation, of Newark, for \$7,399.50; this was not the lowest bid received, but the Street Committee was dissatisfied with the material used by the lowest bidder.

**Newark, N. J.**—The Board of Public Works August 11 awarded contract for paving with telford a portion of Bridge st. to R. Arthur Heller and John C. Cory.

**Paterson, N. J.**—The Board of Works has awarded contracts for grading, curbing and guttering of portions of following streets: Keen st., F. T. Torbett; East 18th st., East 21st st., Leslie st. and State st., Phillip

Kramer; East 32d and Franklin sts., A. H. Smith.

The Board also awarded contracts for the repairing of parts of the following macadamized streets: Mill st. and Bond st., Phillip Kramer; Graham ave., Court st., Sparrow st. and Lyon st., J. S. Sowerbut; Godwin st., McKiernan & Bergin.

**Buffalo, N. Y.**—The Barber Asphalt Paving Co., 880 Ellcott square, has submitted lowest bid for paving a portion of Elmwood pl., at \$26,300 for tar macadam base, and \$31,300 concrete base.—Frank G. Ward, Commissioner of Public Works.

**Geneva, N. Y.**—Bids upon laying of concrete walks which were received August 12 were opened and read; as all of the bids were in detail, they were referred to Secretary for tabulation; from prices named in proposals Charles J. Cooley is low bidder; while his proposal is modified slightly by his prices on the minor provisions of the specifications his general price on new walk is 12c. per sq. ft. and 11½c. if city pays cash; principal prices of the other bids are as follows:

Walter Curtis, new walk complete, time, 13c.; cash, 12c.; repairing old walk, cash, 5c.; time, 6c.

John Mennell, Evans st. only, new walk complete, cash, 13c.; time, 14c.

E. Cole, Evans st. only, new walk complete, 13c.

William Hennessey, new walk complete, cash, 12½c.; time, 13½c.; repair or straighten walks, 6c.

**Hoosick Falls, N. Y.**—Geo. H. Gifford, of Jamaica, L. L., has secured contract for 35,943 sq. ft. sidewalk, 5,863 sq. ft. of gutters, 7,273 lin. ft. curb, etc., bids opened August 6 by the Public Improvement Commission, for \$10,051. Other bids received were: Goodale & Jamison, Schenectady, \$10,990; Kingsbury Construction Co., Sandy Hill, \$11,582; M. Fitzgerald, Hoosick Falls, \$12,757; Tri-Ad Construction Co., Schenectady, \$12,894; Walter E. Hassam, Worcester, Mass., \$12,936, and William King, Water-vliet, N. Y., \$14,311.

**New York, N. Y.**—Bids were received August 12 for (a) paving with asphalt blocks on a concrete foundation the roadways of Park ave., West, from East 175th st. to East 172d st.; (b) Hoe ave., from Freeman st. to East 172d st.; (c) Fulton ave., from 170th st. to 175th st.: (a) Barber Asphalt Paving Co., 30 Church st., \$14,647; Hastings paving Co., 25 Broad st., \$14,708; (b) Barber Asphalt Paving Co., \$14,413; Hastings Paving Co., \$14,520; (c) Barber Asphalt Paving Co., \$41,187; Hastings Paving Co., \$41,243.

**Syracuse, N. Y.**—Engineer Sarr has received notice from Albany that contracts for the repair of improved roads in this division have been awarded for nearly \$105,500; the highways, counties in which located, bidders and contract price are as follows: Bristol road, Ontario county, Thomas Hucknall, of Albion, \$5,877.10; Bristol Valley road, Ontario county, Monroe Roads Co., of Pittsford, \$16,870; Koneoye-Hemlock road, Ontario county, Casey & Murray, of Rochester, \$17,900; Geneva-Canandaigua road, sections No. 2 and No. 1, Ontario county, Monroe Roads Co., \$19,182.50 and \$17,363.60; Oxford-McDoneough and Greene-Smithville roads, Chenango county, E. D. Baker, of Binghamton, \$11,808.54; Norwich-Plymouth road, Chenango county, E. D. Baker, \$16,450.91. The repairs, Mr. Sarr said, include breaking up the old surface of the roads and putting on new stone, resulting in practically a new highway.

**Syracuse, N. Y.**—The following bids have been received for paving Marcellus st.; Gaffey & Byrns, \$39,338; F. J. Baker, \$40,476.50; the former bid \$2.05 for paving outside the roadway strip and \$2.25 within the strip; Baker bid \$2 for paving outside the tracks and \$2.50 for the strip.

**Muskogee, Okla.**—Bids were let on five paving districts. In District 83, Spaulding boulevard from Okmulgee to Cincinnati, the H. B. Nelson Co., was the successful bidder at \$7,450.50, or 98c. a sq. yd., 45c. lower than the next lowest bid; this district is to be paved with oil macadam. Nelson also was given the following districts: G. st. from Okmulgee to Franklin, oil macadam, \$8,699.38; Park drive, in East Okmulgee Park, \$18,481.26, oil macadam. The McNerny Co. secured one district on 14th st. from Emporia north, for \$3,582.15; it will be paved with Texaco. District No. 88, which comprises several streets on the east side, went to the Phoenix Co., a new firm, for \$26,581.05.

**Portland, Ore.**—Cascade Contract Co. has submitted lowest bid for constructing hard surface pavements on several streets; total, \$52,726.

**Harrisburg, Pa.**—Council has awarded the contract for curbing North Front st. to S. W. Shoemaker & Son., of Harrisburg, at 65c. per lin. ft.

**Media, Pa.**—Contract for paving with Mack vitrified brick blocks Front st. dis-

tance of 300 ft. has been awarded to John Hanna & Sons, of Chester, their bid being \$2.04 a sq. yd., the total cost being \$2,176.68. The other bids were A. V. Baker, \$2.15 a sq. yd., and Warren A. Baker, \$2.45 a sq. yd.

**Norristown, Pa.**—The Jersey Paving Corporation, Newark, N. J., has been awarded contract for paving Washington st. with Metropolitan brick for \$7,399.50.

**Philadelphia, Pa.**—Following are bids opened by Bureau of Yards and Docks, Navy Dept., Washington, D. C., August 14, for paving at the Navy Yard: Lawler Bros. Construction Co., 13 Park Row, New York, N. Y., \$81,300; American Paving & Construction Co., 211 S. 9th st., city, \$35,000; Fibert Paving & Construction Co., 903 Pennsylvania Bldg., city, \$33,115; Thos. F. Deegan & Co., 1100 Betz Bldg., city, \$34,285; Frank B. Sweeten, 111 Delaware ave., Camden, N. J., \$31,024; Jas. H. Stitzer, 1201 Chestnut st., city, \$21,435; Boiger & Cummins, 205 Chelton Trust Bldg., Germantown, \$44,009.

**Scranton, Pa.**—McDonald Construction Co. has secured contract for paving portion of Myrtle st. with asphalt at \$1.93 per sq. yd.

**Somerset, Pa.**—Bids as compiled on three sections of Somerset-Johnstown road by the State Highway Department follow, including culverts of cast-iron pipe (c. i. p.) or corrugated pipe (c. p.) as follows:

For 3,160 ft. in Somerset Borough—Somerset Construction Co., native stone bottom, brick top, \$9,646.80; Commonwealth Construction Co., New York, Ligonier stone bottom, brick top, \$12,148.83; McLaughlin Construction Co., Pittsburg, stone bottom, brick top, \$9,811.30; J. C. McSpadden, native stone bottom, brick top, \$7,772.37; Rudolph & Means, Punxsutawney, local stone bottom, Rockwood brick top, \$10,373.10; Thomas Sweeny & Co., Pittsburg, Ligonier stone bottom, Maxwell brick top, \$9,646.80; W. H. Herr, Altoona, bluestone bottom, brick top, \$8,791.98; Hallam Construction Co., Washington, local stone bottom, brick top, \$10,031.98; Crossan Construction Co., Brownsville, stone bottom, brick top, \$10,815.50.

For 19,610 ft. in Somerset Township—Crossan Construction Co., native stone bottom, Dunbar stone with asphalt top, \$80,729.96; McCormick & Co., Philadelphia, local stone bottom, Rockland limestone with asphalt top, c. i. p., \$63,614.80; c. p., \$62,832.80; Hallam Construction Co., native stone bottom, Ligonier stone with asphalt top, c. i. p., \$64,826.82; Thomas Sweeny & Co., native stone bottom, Ligonier stone and asphalt top, c. i. p., \$50,588.37; c. p., \$50,271.09; Conestoga Construction Co., Pittsburg, local stone bottom, Ligonier or limestone with Standard asphalt top, \$52,214.19; local stone bottom, Ligonier or limestone with asphalt-oilene, \$55,700.39; Rudolph & Means, local stone bottom, Ligonier or trap with Standard Oil asphalt top, c. i. p., \$51,108.26; c. p., \$50,620.76; Commonwealth Construction Co., New York, Ligonier stone bottom, Ligonier and asphalt top, \$58,226.72; Somerset Construction Co., native stone bottom, Ligonier stone with Genasco asphalt top, c. i. p., \$45,873.54; c. p., \$45,461.04; J. C. McSpadden, native stone bottom, Ligonier stone and asphalt top, c. p., \$42,981.62; c. i. p., \$44,537.62; McLaughlin Construction Co., native stone bottom, limestone or Gulf Refining asphalt top, c. i. p. or c. p., \$42,990.95; native stone bottom, native limestone top alone, \$39,504.75; Ridge Brothers & Co., Pittsburg, stone bottom, stone and asphalt top, c. i. p., \$68,985.70; c. p., \$68,353.70.

For 20,463 ft. in Lincoln Township—Commonwealth Construction Co., Ligonier stone bottom, Ligonier stone or sample and asphalt top, \$64,968.96; Crossan Construction Co., native stone bottom, Dunbar stone and asphalt top, \$78,334.11; Ridge Brothers & Co., stone bottom, stone and asphalt top, c. i. p., \$71,911.05; c. p., \$70,559.55; Thomas Sweeny & Co., native stone bottom, Dunbar and Indian Refining asphalt top, c. i. p., \$63,457.04; c. p., \$62,966.52; Rudolph & Means, local stone bottom, Ligonier and Standard Oil asphalt top, c. i. p., \$59,047.45; c. p., \$58,302.15; Somerset Construction Co., local stone bottom, Ligonier stone and Genasco asphalt top, \$66,289.85; Conestoga Construction Co., native stone bottom, Ligonier or limestone with Standard asphalt top, \$58,150.58; W. H. Herr, local stone bottom, Ligonier bluestone with American Asphalt Co.'s asphalt top, c. p., \$45,287.44; c. i. p., \$45,964.26; J. C. McSpadden, native stone bottom, Ligonier stone with Amesite or Indian Refining asphalt top, c. i. p., \$50,696.35; McCormick & Co., local stone bottom, Rockland stone and asphalt top, c. i. p., \$84,012.65; c. p., \$83,100; McLaughlin Construction Co., native stone bottom, limestone or Gulf Refining asphalt top, c. i. p. or c. p., \$49,735.45; native stone bottom, native limestone top, \$46,097.55.

**Providence, R. I.**—State Board Public Roads, Aug. 11, awarded contracts for paving 2½ miles of the Little Compton and Tiverton road to Amos D. Bridges Sons, Inc., of Hazardville, Conn., for \$10,165.

**Nashville, Tenn.**—Board of Public Works has awarded following contracts for construction of sidewalks: 15th ave., Uncle Hiram Roofing Co., at \$1.49 per sq. yd.; Ewing ave., Nashville Roofing & Paving Co., at \$1.46½ per sq. yd.; Grand ave., J. T. Southgate, at \$1.46½ per sq. yd.; Eleventh ave., Southern Roofing & Paving Co., at \$1.49 per sq. yd.; sidewalks and curbing on Monroe st. to same company, all local bidders.—W. W. Southgate, City Engineer.

**Dallas, Tex.**—For paving eight streets the bids of the Texas Bitulithic Co. were identical, at \$2.37 a sq. yd. for bitulithic paving on 5-in. gravel concrete foundation with 5-year maintenance; \$2.52 for 10-year maintenance; \$2.27 without maintenance; \$2.44 for additional five years, \$2.19 without maintenance; 75c. a running ft. for straight curb and gutter, 75c. for curved; 45c. for straight curb, 60c. for curved; 51c. for 24-in. gutter, and 15c. for resetting old stone curbs; Coffeyville or Pittsburg brick will be furnished for 25c. a sq. yd. additional.

**Temple, Tex.**—L. Ockander, Waco, has been awarded a contract for street paving at \$2.16 per sq. yd.; total, about \$125,000.

**Provo, Utah.**—Council has awarded contract for sidewalk paving in extension No. 3, District No. 10, between 2d and 5th West sts., to J. D. Hanley, of Salt Lake, whose bid was \$2,771.06; S. H. Belmont presented a bid of \$3,475.

**Fort Monroe, Va.**—Contract for filling grading, etc., of parade ground at Fort Monroe has been awarded to the Atlantic Dredging Co., Philadelphia, Pa., at \$17,182.

**Norfolk, Va.**—The Atlantic Bitulithic Company has been awarded a contract for paving in the Seventh Ward, which will amount to \$350,000. Contract calls for paving from the Boulevard to Church st. of every cross town street in the ward from 26th to 39th sts.; total of 160,000 yds., at \$2.20 per sq. yd.

**Portsmouth, Va.**—The Street Committee recommended the acceptance of the following bids for curbing and guttering certain streets in West Park View: Lewis Lawson, for concrete sidewalks and roadways. Bid on sidewalks, \$1.05 per sq. yd.; on roadways, \$1.10 per sq. yd. Sands, Key & Co., for stone paving, \$2.17 per sq. yd.

**Morgantown, W. Va.**—Council has let contract for paving Forest ave. to Arthur M. Lucas & Co.; there were two other bidders, Thoney Pietro and Harry J. Zevely; the bid made by the Lucas company was 5c. per yd. below that of Pietro, whose bid fell below the Zevely bid, the successful bidder's figures on paving being \$1.12 per yd. and 48c. per ft. for curbing.

**Wheeling, W. Va.**—The contracts for street improvements under the bond issue, as made by the Board of Control, were approved by Council. The following were the contracts and bonds which were approved: For furnishing block, the Mack Manufacturing Co., in the sum of \$3,000; furnishing sewer pipe, the Mack Manufacturing Co., \$1,000; furnishing block, the Standard Stone & Brick Co., \$3,000; furnishing Townsend block, Stevenson & Co., \$3,000; furnishing and setting curb, T. William Stobbs, \$1,000; furnishing and setting curb and resetting old curb, D. A. Jacovetty, \$1,000; hauling brick and block, George W. Lemmon, \$500; laying of sewers, Herman Coss and August Myers; street paving, Coss & Myers, \$2,586.81; street paving, George W. Lemmon, \$12,994.03. The contract made by the Board of Control and William Henry for patching the streets and alleys for the ensuing year was approved.

**Wheeling, W. Va.**—George B. Clifford has been awarded a contract for paving Aetna st. and Ascension ave. with Suburban Brick Company's paving block.

**Milwaukee, Wis.**—Board Public Works, Aug. 10, awarded contracts for paving as follows: With brick, 4th st., to Hase & Weiber at \$1.85 per sq. yd. and 8th st. to Geo. E. Zimmermann, 3102 McKinley Boule., at \$213 per sq. yd.; also with brick Forest Home ave., in all 29,165 yds., Badger Construction Co., 105 Grand ave., at \$1.94 per sq. yd.

**Moose Jaw, Sask., Can.**—Contract for about 67,000 sq. ft. concrete sidewalk and 21,000 ft. wood block crossings, etc., bids opened Aug. 9, has been awarded to Nairn Bros., city.—John D. Simpson, City Clerk.

## SEWERAGE

**Birmingham, Ala.**—Council has ordered sanitary sewer constructed at cost of \$800.—H. E. Shropshire, Jr., City Clerk.

**Hastings, Ala.**—Council is considering installation of a sewerage system.

**Talladega, Ala.**—Contracts will soon be let for sewer and paving work; cost \$80,000.—W. A. McCalla, Decatur, Engineer.

**Little Rock, Ark.**—City will construct sewer through the Eighth Ward; cost about \$4,900.—E. A. Kingsley, City Engineer.

**South Pasadena, Cal.**—Olmstead & Gille-

lan, Engineers, will prepare plans for prospective sewer system.

**Chicago, Ill.**—Drainage Board has voted a \$1,500,000 bond issue for general work of sanitary district.

**Dixon, Ill.**—Plans are being prepared by Engineer L. B. Neighbour for 1755 lin. ft. of the sewer.—Blake Grover, City Clerk.

**Lyons, Ill.**—Bids will be received August 25, 2 p. m., by Board of Local Improvements for construction of sewer system and system of water mains.

**Metropolis, Ill.**—City has selected Municipal Engineering Co., Woolner Bldg., Peoria, to prepare plans for sewer system.

**Sterling, Ill.**—City will construct sewer system; cost \$42,000.—John D. Arcy, Engineer.

**Sycamore, Ill.**—Bids will be received after Sept. 1 for one mile of tile sewer.—E. L. Spring, City Clerk.

**Indianapolis, Ind.**—Plans are being prepared by Assistant City Engineer Chas. A. Brown for sewer in Parkway ave.; cost \$25,000.

**Tolleston, Ind.**—City will construct sewerage system; area six square miles; cost \$300,000.—John W. Alvord, Chicago, Engineer.

**Bettendorf, Ia.**—Citizens voted August 9 to issue \$28,000 bonds for the construction of a sewer system.

**Charles City, Ia.**—Council has decided to construct 8 and 10-in. sewers in three streets.

**Council Bluffs, Ia.**—City will construct sewer system in new district; cost about \$400,000.

**Garnett, Kan.**—Plans are being prepared by Burns & McDonnell, Kansas City, Mo., for sewers; septic tanks will be used.

**Paducah, Ky.**—City is considering construction of sewerage system in district No. 3; cost about \$400,000.

**Lake Charles, La.**—Commissioners have been elected for sewerage system which will be installed at cost of \$200,000.

**Amherst, Mass.**—Plans have been prepared for sewer in North Amherst.

**Gardner, Mass.**—City has sold \$45,000 sewer bonds at private sale.

**Canby, Minn.**—New plans are being made for construction of several sewers. Ole N. Rund, City Recorder.

**St. Cloud, Minn.**—Council has authorized plans and specifications prepared for sewer district in the western and southern portion of city.

**St. Paul, Minn.**—Plans have been completed by City Engineer L. W. Kundlett for sewer on Atwater st.; cost \$37,752.

**Magnolia, Miss.**—Board of Aldermen has acted favorably on proposition to extend sewerage system so as to embrace entire residence district.

**Bitter Root, Mont.**—Bitter Root Irrigation Co. has decided to install sewer system.

**Hastings, Neb.**—City has created Sewer District No. 47.—A. T. Bratton, City Clerk.

**Collingswood, N. J.**—A. D. Rogers has been authorized to prepare preliminary plans, upon which proposition of bond issue for water plant will be put before people.—W. B. Oliver, Chairman General Committee.

**Fultonville, N. Y.**—Bids will be received August 30 for the purchase of \$30,000 bonds for sewers.—W. H. Van Wie, Engineer.

**New York, N. Y.**—Bids will be received by Borough of Bronx for rebuilding the sewer in Hunt's Point road and Whittier st.—Louis F. Haffen, President.

**Sloan, N. Y.**—It may be necessary for this village to soon construct a sewage disposal plant.

**Waterloo, N. Y.**—Taxpayers have voted \$100,000 bonds to complete sewer system.

**Carrington, N. D.**—City will construct a new sewerage system.

**Bucyrus, O.**—Council is considering construction of sewers on North Side.

**Cleveland, O.**—City Engineer Hoffman will investigate process of sewage reduction followed in England with view to make use of system in this city, if possible; plan consists of utilizing solids in sewage; three independent sewer systems would be established instead of one as planned and there would be three heating stations and instead of one intercepting sewer outlet there would be three; proposed plan means a saving of between \$500,000 and \$1,000,000.

**Galion, O.**—Council has passed ordinance providing for building lateral sewer in the 11th district.

**Ironton, O.**—Board of Public Service has ordered City Engineer to prepare estimate of cost of constructing sanitary sewer in Locust alley.

**Lima, O.**—City Engineer will make estimated cost on following recommendations of Board of Health: Construction of large trunk sewer by deepening present channel, Ottawa River, blasting out in center and building sewer impervious to surface water and carrying same to point near Timberlake sewer; also construction of dam at this point to maintain sufficient depth of water above dam.

**Sebring, O.**—Citizens will vote August 28

on \$25,000 bonds to construct sanitary sewerage system and disposal plant.—R. J. Jones, Mayor.

**Portland, Ore.**—City Engineer is preparing preliminary plans for a sewer which will drain four districts, covering several square miles; cost about \$1,000,000.

**Dunmore, Pa.**—Borough has authorized construction of trunk or main sewer in Fourth Sewer District and laterals in Section A of same district.—C. H. Yenter, Secretary.

**Pittsburg, Pa.**—Mayor W. A. Magee has visited Chicago, inspecting sewage disposal system, as city will be in market within year for sewage disposal plant.

**Florence, S. C.**—The Board of Sewer Commissioners has selected F. B. Jaudon, of Savannah, to prepare plans for the proposed sewer system.

**Parker, S. D.**—City is considering construction of sewer system.—C. L. Jones, City Auditor.

**Dallas, Tex.**—City Engineer J. M. Preston has estimated cost of Elm st. storm sewer at \$20,000 and East Side ave. sewer at \$500.

**Tacoma, Wash.**—Council has ordered sanitary sewers constructed on A and other streets.—L. W. Roys, City Clerk.

**Moundsville, W. Va.**—Citizens will vote on bonds for construction of sewerage system.

**Appleton, Wis.**—City will construct a new 10-in. sewer on Wisconsin ave.

**Hamilton, Ont., Can.**—City Engineer Macallum has estimated cost of building new west end sewer at \$27,000.

## BIDS RECEIVED AND CONTRACTS AWARDED

**Turlock, Cal.**—W. J. Schmidt, of Berkeley, has secured contract for constructing sewer system, including the building of a septic tank, at \$23,840. Other bids were as follows: W. F. McBride, Los Angeles, \$23,999; Wolf & Anthony, Monterey, \$27,000; Murray Vincent Co., Turlock, \$24,777; William Heafy Co., Oakland, \$27,228.

**Monte Vista, Colo.**—Contract for constructing district sewer has been awarded to F. M. Kerns, Denver, for about \$17,000.

**Mt. Carmel, Ill.**—Crane & Crane, of Carbondale, have secured contract for construction of the West Side sewer system; cost about \$30,000.

**Evansville, Ind.**—Contracts for three sewers were let by the Board of Works; the Newman Sewer Construction Co. was given the contract for a sewer in Evans ave. at \$2,631.33; also for a sewer in Bedford ave., for \$1,673.18, and F. Megular & Son were given contract for a sewer in Grand ave. for \$1,587.83.

**Fort Wayne, Ind.**—William Kruse and Fred H. Fuelling had to draw lots to decide a tie bid for a sewer in the alley between Knitters' and Runnion aves. and Kruse got the contract; the bid was 96c. a lin. ft.

**Westville, Ind.**—Leo Gross, Wanatah, Ind., has been awarded contract, at \$6,940, for construction of a drain.—Jared Kardner, Constructing Commissioner.

**Hutchinson, Kan.**—The contract for new Northwest sewer was let to Oscar Davis; his bid on the work and material was: 5,280 ft. of 8-in. pipe laid, 29c a ft.; 155 Y's, 6x8 in., 40c. each; seven manholes, \$22 each; four flush tanks, \$52.50 each; total, \$1,957.70; the Sanitary Heating and Plumbing Co. was an unsuccessful bidder.

**Boston, Mass.**—Superintendent Emerson has awarded to the T. J. Young Co. a contract for constructing sewerage works in Washington st. between Williams and Green sts., West Roxbury, for \$7,906.80; the company submitted the lowest of seven bids; other bidders were: E. F. Kennedy, \$8,161.05; McCarthy & Walsh, \$8,433.49; Coughlan & Shells, \$8,651.94; John F. O'Connell, \$9,906.90; D. E. Lynch, \$9,110.80; A. Cefalo, \$10,843.90.

**Medfield, Mass.**—Contract for enlargement of filter beds at the Medfield Insane Asylum has been awarded to Michael Little & Co., Leominster, for \$9,375.

**New Bedford, Mass.**—Bids have been received for the extension of Washburn st. sewer outlet as follows: Frank C. Taylor awarded contract, \$6,400, and Chas. E. Davis, \$7,490.50.

**Detroit, Mich.**—Five attempts to secure lower prices on sewer construction on Vinewood ave. and on 31st st., by rejecting all bids and advertising for new ones, having proved ineffectual, Commissioner Haarer, of the D. P. W., informed the Council that he has decided to award the contract to the lowest bidders in the latest competition. The sewer work on Vinewood, 1,135 lin. ft., from Scovel pl. to the north line of the Boulevard, will be done by J. A. Mercier, for \$4,521.90; on 31st st., 3,189 ft., from Warren ave. to Beechwood, by William Porth, for \$12,721.55.

**Grand Rapids, Minn.**—The Village Board has awarded contract for building three blocks of sewer running from 9th st. to 7th st. on Hoffman ave., thence east one

block to the main sewer on Kindred ave. Five bids were received for the work, the bidders being William McVeigh, George Arscott, Al Garling, E. R. Browne and James Passard. The bids ranged in price from \$1,800 to \$1,600, and Mr. Passard's bid being the lowest, his bid was accepted.

**Elizabeth, N. J.**—City Council special Committee on River Improvements has awarded contract for constructing pumping station for the new intercepting sewer to B. H. Brooke & Co., 50 Church st., New York, N. Y., for \$12,835.

**Kearny, N. J.**—William C. Green, Davis ave., has been awarded contract by Town Council to build a sewer in Forest st.; his bid was \$1,014; other bidders were Dennis Dunn, Jr., and John Bone, also of Kearny.

**Paterson, N. J.**—The Board of Awards has awarded the contracts for the construction of sewers through portions of the following named streets: Madison ave., East 18th st. and Bond st., Francis P. Murray; East 32d and Franklin sts., Joseph Puglia, they being the lowest bidders.

**Perth Amboy, N. J.**—The Board of Aldermen received bids for building 15-in. pipe sewers in Water and Lynde sts. and awarded both contracts to Liddle & Pfeiffer as their figures were low. The proposals were as follows:

Water st. sewer—Martin Hansen, \$1.40 per lin. ft. for laying 15-in. pipe; \$35 each for manholes; \$75 each for receiving basins; total, \$1,550. Johan Jensen, \$1.75 per ft. laying pipe; \$40 for manholes; \$90 for receiving basins; total, \$1,915. Liddle & Pfeiffer, \$1.20 per ft. for laying pipe; \$30 for manholes; \$75 for receiving basins; total, \$1,350.

Lynde st. sewer—Liddle & Pfeiffer, \$1.59 per ft. for laying pipe; \$30 for manholes; total, \$696. Martin Hansen, \$1.65 per ft. for laying pipe; \$35 for manholes; total, \$770. Johan Jensen, \$1.40 per ft. for laying pipe; \$40 for manholes; total, \$1,040.

**Binghamton, N. Y.**—Board of Contract and Supply, Aug. 4, awarded contract for Main st. storm water sewer to John Tyne for \$6,366.

**Olean, N. Y.**—Bids were opened, Aug. 10, by Council for constructing outlet sewer about 2.4 miles in length in the 8th ward; also for an additional outlet sewer in the 1st, 4th and 5th wards, in all 1.3 miles in length; contract has been awarded to Kuhn & Applegate, for \$14,565.—Chas. Keenan, City Clerk.

**Newberry, N. C.**—Bids were received, Aug. 10, by Commissioners of Public Works for extension of sewerage and water systems, bids follow: Walter & Wagner, \$36,239, 6 mos.; J. W. Gurley & Co., \$42,018, 9 mos.; Bowe & Page, \$34,623, July 1, 1910; Berghous & Moffit, \$39,080, Sept. 1, 1910; McKay Engineering Co., \$38,745, June 1, 1910; George W. Waring, \$36,865, April 1, 1910; Wilson, Sompayrac & Urquhart, Columbia, S. C., Consulting Engineers.

**Athens, O.**—Wm. R. Wilson has secured contract for constructing storm sewers in Dist. 1; cost, about \$8,500.

**Cincinnati, O.**—Board of Public Service, Aug. 5, awarded contract to Thos. P. Strack for sewers on Glenway and Grand aves., at \$14,453, and to the Connally Construction Co. for sewers on Seegar and Vinton sts., at \$7,643.

**Chandler, Okla.**—Contract has been awarded to W. W. Cook & Son, of Wagoner, for constructing sewer system, at \$17,686.—J. Bart Foster, City Clerk.

**Altoona, Pa.**—Isaac Bender has been awarded a contract for constructing a sewer in Ninth ave. for 6c. per lin. ft. and E. A. Herr, contract for sewer, alley between 13th and 15th sts., 6c. per lin. ft.; both are 8-in. vitrified pipe.

**Dunmore, Pa.**—Town Council has rejected all bids for construction of Third and Fourth District trunk and lateral sewers; Third District bids were as follows: Engineering Construction Co., trunk sewer, \$10,600; lateral sewers, \$24,985; total, \$35,585. Spruks Bros., trunk sewer, \$12,100; lateral sewers, \$24,200; total, \$36,300. Gabriezio D'Andrea, trunk sewer, \$12,000; lateral sewers, \$21,000; total, \$33,000. O'Boyle Bros., trunk sewer, \$14,255; lateral sewers, \$25,800; total, \$40,055. Summa & Sautercerra, trunk sewer, \$13,000; lateral sewers, \$24,300; total, \$37,300.

Fourth District: Spruks Bros., trunk sewer, \$1,800; lateral sewers, \$8,127.50; total, \$9,927.50. Engineering Construction Co., trunk sewer, \$2,300; lateral sewers, \$10,150; total, \$12,450. O'Boyle Bros., trunk sewer, \$2,050; lateral sewers, \$9,475; total, \$11,525. Gabriezio D'Andrea, trunk sewer, \$1,600; lateral sewers, \$8,350; total, \$9,950. Summa & Sautercerra, trunk sewer, \$2,100; lateral sewers, \$8,600; total, \$10,700.

**Media, Pa.**—Contract for construction of 3-ft. terra-cotta sewer, 165 ft. long, at State and Edgemont sts., has been awarded to A. V. Baker, his bid being \$525; the other bids were: John Hanna & Sons, \$750; Warren A. Baker, \$750.

**Scranton, Pa.**—Contract for the Pike st. sewer course has been awarded to J. J.

Jones & Co., at 89c. per ft.; the other bidders were: Harris & Co., 95c. per ft., and J. J. Mannion, \$1.16 per ft.

**Lead, S. D.**—Bids for building sewers in Grant st., 5th ave., Short st. and Addie st. were opened, there being two bidders, E. J. Wilson and N. Farlow; Wilson's bid was 75c. a ft. for Grant st., 80c. for Railroad ave., 85c. for Short st. and \$1 for Addie st.; there was also a provision that \$4 per yd. was to be allowed if rock were encountered where powder was necessary; this applied to Addie st. only. Farlow's bid was 74c. a foot throughout, with a provision that if rock were encountered where powder was needed \$5 per yd. additional was to be paid; this applied to all the streets; Wilson secured the contract.

**Elizabeth, Tenn.**—Sewer contract has been awarded to R. L. Blevins, of Bristol.

**Dallas, Tex.**—C. W. Olcott was given contract for laying 6-in. sanitary sewer on Maple ave., Katy, Routh and connections, at \$1,300; the other bid was Dallas Home Improvement Co., \$1,337.

**Portsmouth, Va.**—Contract for furnishing terra cotta pipe of various sizes was awarded to Drummond & Co., whose proposal was the lowest.

**St. Albans, Vt.**—A contract has been closed with the American Sewer Pipe Co., of Philadelphia, to furnish the pipe for the trunk line sewer; the contract calls for 2,600 ft. of 36-in. pipe, 100 ft. 32-in., 65 ft. 30-in., 50 ft. 24-in., 5,124 ft. 20-in., 1,450 ft. 18-in., 2,220 ft. 15-in., 4,260 ft. 12-in., 4,240 ft. 10-in. and 1,085 ft. 8-in.; the contract price for the whole is \$12,558.51.

**Seattle, Wash.**—Contract for the King st. trunk sewer has been awarded to Dan McGarry at \$10,587, and the filling of 1st ave. South between Stacey and Hanford sts. to Mougin & Price, at \$39,362.50; the King st. sewer is to be reinforced concrete.

**Seattle, Wash.**—The contract for the Connecticut st. trunk sewer was awarded to Walker & Plachy, at \$106,854.80, after the firm had requested that it be allowed to withdraw its bid and be returned a certified check for \$5,500.

## WATER SUPPLY

**Jasper, Ala.**—The Birmingham Water Light and Power Co. has been incorporated to furnish water and light.—W. L. Friel, C. E. Glover, S. W. Hawkins and T. H. Friel, Incorporators.

**Montgomery, Ala.**—The Tennessee Co. is preparing to build storage reservoir and store its water near Ensley at early date.

**Paragould, Ark.**—Council is considering the piping of water to city from Burnett Springs.

**Vallejo, Cal.**—Citizens are considering an election on \$30,000 bonds for improvement of Fleming Hill reservoir.

**Delta, Col.**—City will improve its water system by extra piping; will also erect concrete pressure basin.

**Denver, Col.**—Eleventh Ward Water Consumers' Club is urging water system.

**Middletown, Conn.**—Samuel McKenzie, Southington, Engineer, has recommended construction of storage reservoir.

**Yalesville, Conn.**—Citizens are urging installation of municipal water plant.

**Cuthbert, Ga.**—Citizens will vote in October on bonds for improving the water and electric light plant; also boring wells.—J. B. McCrary, Atlanta, Engineer.

**South Boise, Ida.**—City is considering erection of water works plant.

**Ashkum, Ill.**—Village Board will install water works.

**Cairo, Ill.**—Cairo Water Co. will be granted a new franchise; extensive improvements will be made.

**Fithian, Ill.**—Council has appointed a committee for installation of water works and electric lights.

**Torino, Ill.**—County is considering matter of water supply.

**Jasper, Ind.**—Farmers' and Merchants' Bank has been awarded \$4,000 reservoir bonds for \$4,018.50.

**South Paris, Ia.**—City will build \$50,000 water system.—G. R. Morton, Engineer.

**Woodland, Ia.**—Citizens will vote on water works bonds.

**De Ridder, La.**—Water company, Fred Johnson as President, has been formed by Water Works Committee and will install plant at once.

**Amherst, Mass.**—Amherst Water Co. will let contract at once for 20,000,000-gallon reservoir.

**Easthampton, Mass.**—Contract will be let about August 26 for water works improvements; cost \$30,000.—W. C. Tannant, Town Engineer.

**Gardner, Mass.**—Engineer G. A. Kimball has recommended building of dam across Kneeland Brook and the pumping of water from dam into Crystal Lake in order to increase water supply.

**Lynnfield, Mass.**—Town will consider matter of having city of Lynn lay water pipes through streets.

**Pittsfield, Mass.**—City Engineer Farnham has estimated cost of laying 6-in. water main from Silver Lake at \$50,000; with electrical pumps, about \$60,000.

**McBain, Mich.**—Residents are urging installation of water works; cost about \$7,500.

**Duluth, Minn.**—Board of Water and Light Commissioners will expend \$9,000 in repairing reservoir at West Duluth.

**Milaca, Minn.**—Minneapolis officials are considering the purchase of Mille Lacs Lake as a source of water supply.

**Red Wing, Minn.**—Bids will be received until September 3 for \$25,000 bonds for improving water system.

**Cleveland, Miss.**—City has selected J. A. Omberg, Jr., of Memphis, Tenn., engineer for proposed water works.

**Gulfport, Miss.**—Council has approved \$50,000 bond issue; money will be used for extension of water works and improvement to fire department.

**Carterville, Mo.**—Bids will be received September 2 for \$50,000 water works bonds.—W. R. Roberts, Mayor.

**Conrad, Mont.**—City is considering installation of water works and electric light plant; cost \$65,000.

**Newark, N. J.**—Board of Trade has voted its approval to city's proposed acquisition, through the State Water Supply Commission, of the Wanakena watershed.

**Shrewsbury, N. J.**—Borough has voted to borrow \$12,000 for system of water works.

**Baldwinsville, N. Y.**—Bids will be received until August 31 for sale of \$50,000 refunding water bonds.—M. Johnson, Village Clerk.

**Cohoes, N. Y.**—City will sell \$75,000 bonds for water system improvement.

**Hempstead, L. I., N. Y.**—Baldwin Water Co. has been incorporated to supply water.—R. G. Anderson, Freeport; W. E. Bruckhauser, of Baldwin, and G. B. Latimer, of Rockville Centre, Incorporators.

**Cincinnati, O.**—City will receive bids for 9,000 tons of crushed lime and 16,000 tons of iron sulphate for use in coagulation at the water works.—Address Superintendent Pollard.

**Lorain, O.**—Board of Service will purchase 65 Lambert water meters.—Address Superintendent Roberts.

**Wellington, O.**—Hayden, Miller & Co., Cleveland, have been awarded \$2,500 water main extension bonds at \$40 premium and accrued interest.

**Durant, Okla.**—Plans have been received by Council for settling basin for water system.

**Drain, Ore.**—City has appointed committee to prepare plans for new \$20,000 water system.

**Freewater, Ore.**—City will install a water works system; also reservoir with capacity of 250,000 gallons.

**Portland, Ore.**—City Executive Board has decided to extend Bull Run water to the Mount Scott district and lay a reinforcing main to Sellwood to relieve the water famine in that territory as early as possible; Engineer D. D. Clarke has made a preliminary report on the proposed main to the Mount Scott district; 12 or 16-in. main will be sufficient; cost from \$50,000 to \$75,000, together with the distributing mains which would have to be placed.

**Weston, Ore.**—Citizens have voted \$25,000 bonds for installing water works.

**Somerset, Pa.**—Engineers of the Berwind-White Co. are working on plans for enlarging reservoir on Upper Shade Creek.

**Chattanooga, Tenn.**—No acceptable bids were received for \$900,000 water works bond issue.—Address Mayor Crabtree.

**Amarillo, Tex.**—Amarillo Water, Light and Power Co. will install double set of machinery, sink more wells and extend mains; \$75,000 bonds will be issued.—F. A. White, Receiver.

**Baird, Tex.**—Citizens will vote bonds for erection of immense reservoir to supply city.

**Mt. Pleasant, Tex.**—Citizens have voted \$10,000 bonds for extension of water works and paying off an indebtedness.

**Kaysville, Utah.**—Bids will be received September 7 for the purchase of \$25,000 bonds for constructing water works.—A. P. Merrill, Provo, Engineer.

**Graham, Va.**—City desires prices on about three miles of 10 or 12-in. iron pipe, low pressure.—O. A. Metcalfe, Recorder.

**Seattle, Wash.**—Board of Public Works will ask new bids for lining of two Green Lake reservoirs; Contractor E. C. McDougall has given up contract received at \$130,979.—R. H. Thomson, City Engineer.

**Seattle, Wash.**—City Engineer R. H. Thomson has asked for \$250,000 for water mains and standpipes; also \$603,365 for installation of water mains and changing of existing mains in regrade districts.

**Spokane, Wash.**—The Civic Water Commission has recommended that Wm. F. Zimmerman, Chairman of the Water Commission, assist Prof. Wm. F. Burr, of New York, N. Y., in preparing plans for Spokane's water supply; also that work commence at once on enlargement of the

up-river pumping station to increase its capacity to 40,000,000 gallons daily, and the construction of a 20,000,000-gallon reservoir at an elevation of 2,300 ft.; also installation of meters at the pumping station and on mains at city limits.

**Wheeling, W. Va.**—The Warwood Water and Light Co. has petitioned County Commissioners for a franchise to lay, maintain and operate mains and pipes for supplying water.

**Albany, Wis.**—Plans are being prepared by W. G. Kirchoffer, Madison, Engineer, for construction of water works system.

**Kenosha, Wis.**—Simmeon Manufacturing Co. will purchase old intake; city will construct new one at cost of \$90,000.

**Weyburn, Sask., Can.**—City is considering construction of water works; cost \$75,000.—H. N. Murphy is interested.

### BIDS RECEIVED AND CONTRACTS AWARDED

**New Britain, Conn.**—Following is a list of bidders for concrete dam to be constructed for New Britain Board of Water Commissioners at Burlington, Conn.: Holbrook, Cabot & Rollins, Boston, Mass., \$89,160; Pierson Engineering & Construction Co., Bristol, \$70,160; Michael Little & Co., Boston, Mass., \$78,508; J. J. Fahey & Co., Boston, Mass., \$89,470; Suzzio & Di Nonni, New Britain, \$81,121.50; Edward Tracey, Derby, \$75,428; Jas. D. Kelly, Boston, Mass., \$74,684; Bunting, Bull & Co., New York, N. Y., \$73,095.—P. J. Egan, Clerk.

**Antioch, Ill.**—Contract for 8,000 ft. 6-in. water mains, bids opened Aug. 11, has been awarded to Wm. Davidson, of Wilmette, for \$6,680.—M. R. Miller, Waukegan, Engineer.

**Joliet, Ill.**—Charles R. Spears has been awarded contract for improvement of Whitley ave., by the construction therein of a water main, with service pipes, fire hydrants, valves and valve manholes, at the following prices: 899 lin. ft. for all material and construction of 6-in. c. i. water main, calked and finished complete, at 82 cts.; 1,230 lin. ft. for excav. and backfilling trenches over water main, hydrant and service connections 30 cts.; 12 lead service connections, 9 ft. long, with corporation and stop cocks connected to main complete, \$9 each; 12 lead service connections, 27 ft. long, with corporation and stop cocks connected to main complete, \$14; three 6-in. gate valves in place, complete, \$13.50 each; two 6-in. hydrants, in place, complete, \$38 each; 24 Buffalo service boxes, in place, complete, \$1.10 each; three valve manholes, in place, complete, \$20 each. Specials in place, complete: Two 6-in. tees, \$6 each; three 6-in. plugs \$1 each; one 6-in. cross, \$8 each.—Board of Local Improvements, Wm. S. Welch, Clerk.

**Earlham, Ia.**—The Town Council has let the contract for the water works and the electric lighting plant to Joseph A. Bortenlanger, of Omaha, at \$16,696; the alternating system of lighting and the pressure system for water were adopted; the entire work is to be completed by December 1.

**Osage City, Kan.**—The Freeborn Eng. Co., Kansas City, Mo., has secured contract for constructing water works at \$30,500.—Burns & McDonnell, of Kansas City, Mo., Engineers.

**New Bedford, Mass.**—Following is a comparison of bids for a supply of cast-iron pipe and special castings opened August 17 by the Water Board, R. C. P. Coggleshall, Superintendent. There were five bidders, but only three submitted bids on the whole supply. The bids were as follows:

**Warren Foundry & Machine Co., Phillipsburg, N. J.**—Schedule A—(awarded contract) 5,903 tons pipe, \$23 per ton, \$135,769.00 220 tons special casting, \$47.50 per ton, 10,450.00

Total, \$146,219.00 Schedule B— 610 tons pipe, \$24.50 per ton, \$14,945.00 20 tons special castings, \$50 per ton, 1,000.00 Total, \$15,945.00 Total bid, \$162,164.

**U. S. Cast Iron Pipe & Foundry Co., New York.**—Schedule A— 5,903 tons pipe, \$23.20 per ton, \$136,949.60 220 tons special castings, \$47.20 per ton, 10,340.00

Total, \$147,289.60 Schedule B— 610 tons pipe, \$23.20 per ton, \$14,152.00 20 tons special castings, \$47 per ton, 940.00 Total, \$15,092.00 Total bid, \$162,381.60.

**Florence Iron Foundry, Florence, N. J.**—Schedule A— 5,903 tons pipe, \$25.10 per ton, \$148,165.30 220 tons special castings, \$55 per ton, 12,100.00

Total, \$160,265.30 Schedule B— 610 tons pipe, \$25.10 per ton, 15,311.00 20 tons special castings, \$55 per ton, 1,100.00

Total, \$16,411.00 Total bid, \$176,676.30.

**Standard Cast Iron Pipe & Foundry Co., Bristol, Pa.**:

Schedule A— No bid on 36-in. and 30-in. pipe. Total bid on remainder. 60 tons of 24-in. pipe, \$23.30 per ton, \$1,398.00 363 tons of 16-in., 12-in., 10-in., 8-in. and 6-in. pipe, \$23.15 per ton, 8,403.45 220 tons of special castings, \$46 per ton, 10,120.00

Total, \$19,921.45 Schedule B—(awarded contract) 610 tons pipe, \$23.15 per ton, \$14,121.50 20 tons special castings, \$46 per ton, 920.00

Total, \$15,041.50

**Russell Wheel & Foundry Co., Detroit, Mich.**:

Schedule A— No bid on pipe. 220 tons special castings, \$62 per ton, \$13,640.00 Schedule B— 20 tons special castings, \$60 per ton, \$1,200.00

**Baudette, Minn.**—J. G. Robertson, St. Paul, and W. C. Frayer, Rochester, have been awarded a contract for constructing water works and sewers.

**Spooner, Minn.**—William C. Frayer, Rochester, Minn., has been awarded a contract for installing a water works.

**Glasgow, Mont.**—Jas. Kennedy, Fargo, N. D., has secured contract for constructing water works, bids opened Aug. 11, for \$53,789.—E. S. Severance, City Engineer.

**Niagara Falls, N. Y.**—The Board of Water Commissioners received 18 bids for the construction of the detail work on the new municipal pumping station; all bids were referred to Engineer W. D. Robbins. Following are the bidders and figures: Contract No. 111, for furnishing the equipment to the pumping station, Farrar & Trefts, Buffalo, \$80,745; Turbine Equipment Co., New York, \$71,600; Allis-Chalmers Co., Milwaukee, Wis., \$86,700; D'Oliver Engineering Co., Philadelphia, \$70,555; McCarthy Bros. & Ford, Buffalo, \$78,000, and the Camden Iron Works, Camden, N. J., \$75,656. On proposal No. 112, for furnishing and installing conduit, Standard Underground Cable Co., \$9,467.40 and \$8,295.60. The two bids were submitted to give the Board an idea of the difference in the power carrying capacity of the cable to be chosen. The American Steel & Wire Co., New York, bid, \$9,207. On contract No. 112, for furnishing about 18,600 ft. of four or eight-hole duct, the following bids were presented: J. Elwood Baird, Buffalo, \$2,967 and \$5,952; William S. Humbert, this city, \$3,653.04 and \$7,306.08; American Sewer Pipe Co., \$3,422.40 and \$6,844.80; H. B. Camp Co., New York, \$3,348 and \$6,696. Contract No. 114 for constructing a conduit in Ferry ave., Portage st., Buffalo and Columbus ave., extension brought out the following bids: Huntley & Alverson, Buffalo, \$21,747 for eight duct and \$18,068 for four duct; Cassani & Dower, this city, \$20,395 and \$17,079; Read-Coddington Co., this city, \$18,742 and \$15,503; McGuire and McQuinn, this city, \$24,232.50 and \$20,055; Martin O'Leary, \$23,781 and \$19,861, and J. Elwood Baird, \$19,002.32 and \$12,700.32.

**Dickinson, N. D.**—Dickinson Htg. & Plumbing Co., city, has secured contract for water extensions for \$6,250.

**East Liverpool, O.**—Two bids were received, Aug. 13, for the construction of a water filtration plant, as follows: Sand & Gravel Co., city, \$63,815.16; Rinehart Bros., city, \$62,626.06.

**Media, Pa.**—Contract for dredging dam at borough water works, under supervision of Water Committee, has been awarded to Benjamin F. Fields, whose bid was \$4,900; the other bids were: A. V. Baker, \$5,800; Warren A. Baker, \$9,000; J. H. Sloan, \$8,400; Wetherill & Bro., \$5,495.

**Dallas, Tex.**—Approval was given to the contract with A. M. Lockett & Co. for furnishing city the centrifugal pumping engine to be installed in a permanent station at Bachman for the pumping of water from Elm Fork into Bachman reservoir; the contract is for the engine at \$4,030, the barometric condenser at \$187 and such further demands as the Board may make on

the bids submitted for the several articles by the company.

**Puyallup, Wash.**—Nevens & Cline, city, were awarded contract to furnish and lay water pipes in the business section where paving is to be laid for \$2,525.60 and was the only one of the three received which complied with the specifications; the latter called for the pipe to be wrapped in burlap after it had been dipped in tar, and then redipped; the other bidders were the Washington Pipe & Foundry Co., of Tacoma, which offered to furnish the standard piping for \$2,127.50, and the Pacific Coast Pipe Co., of Seattle, whose bid was \$2,062.50.

**Seattle, Wash.**—The certified check of E. C. McDougall submitted to the Board of Public Works with his bid for lining the Green Lake reservoir has been declared forfeited. McDougall claimed that he had made an error in computing his price for concrete lining and asked permission to correct it, making his bid \$38,000 higher. This would have made A. H. Gibson the low bidder. Bids are to be readvertised. Detail bids were given last week.

**Wheeling, W. Va.**—The contract for the installation of the proposed new 20,000,000-gallon pump at the city water works was awarded by the Board of Control to the Allis-Chalmers Co., of Milwaukee, Wis., at \$14,000; other bids submitted were as follows: Hoover-Owens-Rentschler Co., Hamilton, O., \$153,700; William Todd & Co., Youngstown, \$160,000; Holly Mfg. Co., Buffalo, N. Y., \$141,655; Bethlehem Steel Co., South Bethlehem, Pa., \$142,800; R. D. Wood & Co. submitted a bid but withdrew it.

**Regina, Sask., Can.**—Canada Iron Co., Ltd., Montreal, Que., has secured the contract for 1,942 tons of c. i. pipe at \$40 per ton, and specials \$65 per ton, all f.o.b. cars at Regina.—Angus Smith, City Engineer.

### LIGHTING AND POWER

**Jasper, Ala.**—Birmingham Water, Light and Power Co. has been incorporated to furnish light and water; dam will be established at junction of Sipsey and Mulberry Forks of Black Warrior River; electric light plant will be installed.—W. L. Friel, C. E. Glover, S. W. Hawkins and T. H. Friel, Incorporators.

**Benton, Ark.**—Atkinson Water Power Co. will operate water power plant on Saline River.—J. F. Lee, President.

**Long Beach, Cal.**—Harbor Electric Light and Power Co. has secured a site for its proposed power plant.

**Needles, Cal.**—Town will vote August 31 on installation of street lights.—Supervisor West is interested.

**Oakland, Cal.**—Great Western Power Co. has applied for electric light franchise.—F. R. Thompson, City Clerk.

**Oakland, Cal.**—Public Betterment Committee has refused to make any recommendation as to erection of electrolites along both sides of Telegraph ave. throughout its entire length until it has been advised by City Electrician Babcock as to the advisability of installing tungsten burners in place of the lights at present used.

**Sacramento, Cal.**—Sacramento Natural Gas Co. has asked for franchise to lay and maintain gas pipes.—W. B. Hamilton, Clerk.

**Killingly, Conn.**—Killingly Power Co. has acquired four water privileges in East Killingly.

**New Haven, Conn.**—Prudential Committee of the New Haven Hospital has made plans for the establishment of new electric light plant; also an ice manufacturing plant; cost at least \$25,000.

**Benton, Ill.**—F. C. Hamilton, city, and C. E. Hamilton, Carbondale, have proposed to city to take over municipal electric light plant and build new plant to supply the city with electricity for lamps and motors.

**Glen Ellyn, Ill.**—Carl S. Spaulding will make extensive improvements to lighting plant, including the installation of a 100-hp. Foos suction gas engine and a Smith gas producer.

**La Salle, Ill.**—Citizens' Lighting Co. will make improvements and extensions to plant which will involve an expenditure of about \$42,000 and will include installation of 300-kw. steam turbine with pumps and condensers, 200-kw. alternating-current generator and other equipment required for changing the lighting system from direct to alternating current.

**Wingate, Ind.**—Wingate Light Co. has applied for a 10-year franchise to erect and equip an electric light plant.—C. I. Johnson, Crawfordsville, is interested.

**Dubuque, Ia.**—Council has received a petition to install 35 additional arc lights.

**Council Grove, Kan.**—H. H. Sparks, Junction City, has been granted franchise to construct and operate an electric light and power plant.

**Baltimore, Md.**—Parker & Thomas are preparing plans for a power house to be constructed at Bayview.

**Baltimore, Md.**—Specifications for next

year's contract to equip, maintain and operate the gas and naphtha street lamps during 1910, which specifications have just been completed, will soon be laid before Board of Awards by Robert J. McCuen, Superintendent of Lamps and Lighting.

**Hagerstown, Md.**—The Hagerstown Railway Co. will purchase 1,000-hp. condenser for its power plant.—H. C. Alvey, Chief Engineer.

**Belchertown, Mass.**—Citizens have voted to install electric lights.

**Lynnfield, Mass.**—Town will petition Gas Commissioners of City of Lynn to lay gas pipes through streets.

**Taunton, Mass.**—Council is considering a \$1,000 appropriation for boiler for City Hall.

**Bemidji, Minn.**—The Warfield Electric Co. has petitioned for renewal of franchise which will soon expire.

**Rochester, Minn.**—Zumbro Power Co. has been incorporated with a capital of \$300,000 by Chas. H. Armstrong, Henry O. Christensen and John M. Norton, to construct a power plant on Zumbro Falls; 60-cycle, 3-phase, alternating system will be used.—L. P. Wolff, St. Paul, Engineer.

**Great Falls, Mont.**—Village Trustees have granted a franchise for lighting the town to G. H. Gay; water power plant, cost \$35,000, will be installed.

**Miles City, Mont.**—Articles of incorporation have been filed for Buffalo Rapids Power Co.; purposes of company are to acquire water rights and lease or sell same for irrigation, domestic manufacturing or other useful purposes; to construct and maintain reservoirs, dams, ditches and power plants; to manufacture and distribute electric current for light, heat and power; erect, buy, sell and purchase telegraph and telephone lines and to build, purchase, sell or hold mills, factories and franchises; three directors have been elected for three months, to wit: George W. Burt, Della M. Burt and H. E. Fearnall.

**Edgar, Neb.**—Citizens have voted to purchase the electric light plant; \$1,000 will be spent for new machinery.

**O'Neill, Neb.**—Citizens are considering installation of electric lighting system.

**Stanton, Neb.**—City is considering plans for extensions to municipal electric light plant which will include installation of a 75-kw. generator, 50 tungsten street lamps and the erection of three miles of transmission lines.—Benjamin Henning, Manager.

**Hoboken, N. J.**—Citizens' Light, Heat and Power Co. has presented ordinance granting it a franchise to lay conduits, erect poles, string wires and build a plant to supply the city and "private" consumers with electric light.

**Paterson, N. J.**—Residents of Totowa Borough and West Park are considering establishment of lighting plant.

**Berlin, N. Y.**—Public Service Commission has granted Berlin Light, Heat and Power Co. permission to issue \$5,000 in capital stock for improvements and extension to its plant.

**Brooklyn, N. Y.**—Harry P. Brearley, 12 Gates ave., Brooklyn, N. Y., will at once purchase a 150-kw., 250-volt, direct-current, belted generator; a 60-kw., 250-volt, direct-current belted generator; one 50-hp. and two 25-hp., 250-volt, direct-current motors; two 50-hp. and two 25-hp., 2-phase, 220-volt motors; a 14-in. Corliss engine; two 100-hp. tubular boilers and a 75-kw., direct-connected, 250-volt unit.

**Cleveland, O.**—Stockholders of Cleveland Electric Illuminating Co. have authorized \$30,000,000 bond issue for future improvement and acquisitions.

**Cleves, O.**—P. M. Hans has been granted a 25-year franchise to furnish electricity for light, heat and power; also a contract for street lighting for term of ten years with 20 or more 2,000-cp. arc lamps.

**Columbus, O.**—State Emergency Board has decided to allow \$82,000 appropriation for purchase of equipment for penitentiary power plant, no provision for this having been made by the Legislature.

**Hamilton, O.**—Council has passed ordinance authorizing Service Board to receive proposals for both natural and artificial gas.

**North Bend, O.**—City has granted P. M. Hans 25-year franchise to furnish electricity for light, heat and motors; also 10-year contract to light the streets of the village, to include 10 or more 2,000-cp. arc lamps.

**Toledo, O.**—Citizens' Lighting and Heating Co. has been granted a franchise to lay conduit on Madison st. to conduct hot water and steam.—J. M. Babcock, Clerk of Council.

**Oklahoma City, Okla.**—Capitol Hill Gas and Electric Co. has been incorporated by O. W. Aubrey, W. L. Harmon and D. Soliday.

**Toledo, Ore.**—Council has granted a 25-year franchise to H. L. Collins, A. C. Smith and J. F. Stewart for the erection and maintenance of an electric light system.

**Reading, Pa.**—Councils have rescinded

action awarding contract for lighting city streets for ten years to Metropolitan Electric Co.; ordinance in force prohibits awarding of lighting contract for more than five years.

**South Bethlehem, Pa.**—Lamp Committee has recommended installation of nine arc lights and 40 incandescent lights.

**Aberdeen, S. D.**—Council has ordered installation of three arc lights, three arc corners and two cluster posts.

**Rapid City, S. D.**—Electric Light Co. has decided to construct 500 ft. of flume.

**Nashville, Tenn.**—Cook Creek Light and Railway Co., Anderson county, has been incorporated.—Chas. Loyd, J. P. Stanton, E. M. Beasley, J. S. Stanton and S. B. Farris, Incorporators.

**Brownsville, Tex.**—H. W. Bennett, Cleveland, O., is considering establishment of gas plant.

**Dallas, Tex.**—Commissioners' Court has granted Lone Star Gas Co., Fort Worth, right to construct pipe line across Dallas county to pipe gas into city from Henrietta gas fields.

**Alexandria, Va.**—Braddock Light and Power Co. has been granted charter to erect and operate electric works.—C. F. Norment, President; F. J. Whitehead, Secretary, and H. W. Fuller, Treasurer, all of Washington, D. C.

**Odessa, Wash.**—Council has granted Washington Water Power Co., Spokane, franchise to furnish electricity; transmission line will be extended from the Harrington-Sprague line to Odessa; distance about 20 miles; cost of transmission line and distributing system, \$50,000.

**Spokane, Wash.**—Ranchers owning 550,000 acres of land in Crab Creek district in Grant county are backing project to pipe water from the Columbia River near Marcus, Stevens county, to point more than 100 miles south, at a cost of \$5,000,000.

**Toronto, Ont., Can.**—City is receiving tenders for 16 synchronous and induction motors, with exciters and switchboards.

**Matamoros, Mex.**—Company has been formed to install electric lights; plant will be erected at once; name of company is Company Luz y Fuerza de Matamoros, with Dr. Barragan, Mexican Consul at Brownsville, Tex., President; E. C. Forto and A. Trevino, Secretaries; A. Lastras, Treasurer; Rafael Cowan, Brownsville, Superintendent.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**Wilmington, Del.**—Wilmington City Electric Co. has awarded to Allis-Chalmers Co., of Milwaukee, Wis., the contract for the purchase of one 1,500 k.w. normal rating turbine and alternating generator, and one 500 k.w. dynamo-motor set, with a complete new switchboard and exciter set; cost, about \$75,000.

**Quincy, Ill.**—Trustees of the Soldiers' Home have awarded contracts for new electric light plant as follows: To Clough Concrete Co., city, masonry, \$3,497; E. Best Plumbing Co., city, piping and covering, \$4,745; Yeoman Bros., Chicago, two pumps and motors, \$589; Gardner Governor Co., city, steam pump, \$470; Adams-Bagnall Co., Chicago, electric service lighting system, \$1,086; General Electric Co., Chicago, switchboards, \$1,035; Ball Engine Co., Chicago, two engines, \$4,800; Electric Machinery Co., Minneapolis, Minn., electric machinery, \$5,525; Kohler Bros., St. Louis, Mo., electric wiring, \$9,377, and F. W. Kellogg, New York, N. Y., smoke stack, \$5,200.

**Wareham, Mass.**—The Buzzards Bay Lighting Co. has been awarded a contract for installing electric lights.

**Westfield, Mass.**—Board of Selectmen awarded contract, Aug. 13, to Westinghouse Machine Co., of East Pittsburg, Pa., for a turbine engine for the electric light plant; cost, \$25,000.

**Grand Rapids, Mich.**—Contract for construction and remodeling the new water works pumping and municipal electric lighting plant on Canal st. has been awarded to Hauser, Owen & Ames, city, at \$89,571; other bidders were Gantz Bros., \$94,697; J. H. Sullivan, \$108,126.

**Ironwood, Mich.**—Ironwood Gas Co. has awarded contract to the General Construction Co., 706 Union Trust Bldg., Detroit, Mich., construction of gas plant both in this city and in village of Hurley, Wis.

**Park Rapids, Minn.**—The Power Engineering Co., Corn Exchange Bldg., Minneapolis, has secured contract for construction of a complete new hydro-electric plant, consisting of a reinforced concrete flume, head race and power house.

**Hastings, Neb.**—Council has ordered the purchase of a 500 k.w. electric generator with direct connected turbine, from the Westinghouse Company, whose price, including the services of a superintending engineer for two weeks and the freight charge to Hastings, is \$13,041. For this

apparatus and steam condenser the Westinghouse Company's bid was \$63 below that of the Allis-Chalmers Company.

**Pierre, S. D.**—Bids have been opened by South Dakota Capitol Commission for the electric fixtures for new South Dakota capitol; bids were based upon a fixed price of \$15,000. Contract was awarded to the Enos Co., 36 W. 37th st., New York.—Sam'l H. Lea, State Engineer.

**Greenville, Tex.**—Bids were received by Joseph F. Nichols, Mayor, July 27, for constructing a lighting and power plant. Contract for steam and electric equipment was awarded to the Allis-Chalmers Co., Milwaukee, at \$38,100.—J. W. Maxey Co., Houston, Engineers.

**North Yakima, Wash.**—The Central Heating Co. has let contract for installing its plant to the Schott Engineering Co., 125 Monroe st., Chicago, at \$62,000.

#### FIRE EQUIPMENT

**Coram, Cal.**—Fire Commissioners will call election to levy special tax to purchase more fire apparatus.

**Vallejo, Cal.**—Citizens are considering an election on \$10,000 bonds for fire department building.

**Washington, D. C.**—A site at Randle Highlands has been selected for proposed fire station; \$26,000 is available for erection and equipment; city will spend about \$1,500 for electrical alarm apparatus for No. 2 engine company.—Address Fire Chief Wagener.

**Jacksonville, Fla.**—Fire Chief has recommended purchase of 2,000 ft. of 2½-in. hose and 1,000 ft. of 3-in.

**Tampa, Fla.**—Chief Harris is urging purchase of hose and chemical auto for his department.

**Cuthbert, Ga.**—City will erect new fire department headquarters.—D. A. McPherson, Mayor.

**East St. Louis, Ill.**—City is considering better fire protection for Edgemont and Lansdowne.—Sils Cook, Mayor.

**Kankakee, Ill.**—City will organize paid fire department.

**Evansville, Ind.**—City will remodel No. 6 and repair No. 8 hose houses.

**Indianapolis, Ind.**—Architects Foltz & Parker, Indiana Pythian Bldg., are preparing plans for a two-story, \$20,000 engine house.

**Dyersville, Ia.**—Council has decided to purchase new hose cart.

**Jefferson, La.**—City will build a new fire house and equip it with two engines.

**Baltimore, Md.**—Architects Owens & Sisco are preparing plans for engine house to be erected on Baltimore st.

**Hopedale, Mass.**—Town has appropriated \$5,000 for the purchase of an auto fire apparatus.

**Lunenberg, Mass.**—Town is considering organization of fire department and purchase of equipment and hose.

**New Bedford, Mass.**—Committee on Fire Department, Jos. Chausse, Chairman, has recommended purchase of one Webb motor fire engine and hose wagon combination.

**Springfield, Mass.**—City will build two new fire stations.

**Westboro, Mass.**—Citizens are urging purchase of a first-class chemical engine.

**Detroit, Mich.**—Architect R. E. Raseman is preparing plans for two-story engine, auto and hook and ladder house.

**Duluth, Minn.**—City will erect an addition to No. 2 engine hospital; a horse hospital will be provided.—Alderman John Hogan, Chairman Committee on Fire Department.

**Gulfport, Miss.**—Council has approved \$50,000 bond issue; money will be used for improvement of fire department and extension of water works system.

**St. Louis, Mo.**—Chief Swingley has been notified to purchase hose.

**Buffalo, N. Y.**—Citizens are urging building of fire station near East Clinton st.

**Muskogee, Okla.**—Council has awarded \$60,000 for bonds to German Bank of Cincinnati.

**Portland, Ore.**—Mt. Scott district citizens are urging purchase of a chemical fire house.

**Butler, Pa.**—Councilman Dan Younkins is urging purchase of auto truck for fire department.

**Oil City, Pa.**—Bids will be received September 13, 7:30 p. m., for purchase of automobile truck; neither chemical engine or pumping apparatus required.—C. W. Mullally, City Comptroller.

**Reading, Pa.**—City did not receive any bids for additions and alterations to the Marion fire engine house.—Caleb Weldner, City Clerk.

**Cumberland, R. I.**—Fire District will vote on purchase of auto combination truck for Valley Falls fire department.

**Woonsocket, R. I.**—Council is considering erection of fire station; 1,000 ft. of hose will be purchased.

**Union, S. C.**—Town has organized a vol-

unteer fire department.—H. B. O'Shields, Chief.

**Nashville, Tenn.**—City will expend \$7,000 for a truck company, \$4,500 for a new aerial truck, \$1,500 for repairs to engine house, \$4,000 for new hose, and \$7,000 for putting fire alarm wires underground.

**Houston, Tex.**—Plans are being prepared for erection of two new engine houses, one of which is to be located in the Westmoreland section and other on Harrisburg road.—W. J. Kohlhauff, City Commissioner.

**Norfolk, Va.**—City has decided to repair Queen st. engine house; cost \$10,000; also to purchase 3,000 ft. of hose.

**Portsmouth, Va.**—Fire Committee has recommended fire station to house Annex Fire Company No. 5; citizens just outside city limits have organized hose company.

**Wallingford, Vt.**—City is considering purchase of hose carts.

**Seattle, Wash.**—Superintendent of Buildings F. W. Grant has asked for \$462,008 to run his department during year; six fire stations are included in estimates.

**Tacoma, Wash.**—City is considering erection and equipment of fire station on Tidelands.—Geo. McAlevy, Chief.

**Beloit, Wis.**—Fire Chief Nygren is favorable to purchase of automobiles for fire department use.

**Menasha, Wis.**—City has decided to purchase new suction hose.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**New Orleans, La.**—Bids were opened by the Board of Fire Commissioners and recommendation for the acceptance of bid of L. Godchaux, for winter uniforms for \$18.25 a suit and \$13.85 for summer uniforms was approved.

**Lawrence, Mass.**—The Gamewell Fire Alarm Co., the only bidder, has been awarded contract to install a new fire alarm system; the National District, formerly the Star Co., protested on the ground that ample time had not been allowed for submitting a bid.

**Peekskill, N. Y.**—Contract will be signed by Board of Trustees for Webb automobile fire engine for Columbian Engine Co.

**Fountain Hill, Pa.**—The Fire Committee received bids for 300 ft. of hose from the Altai Rubber Co., the Revere Rubber Co., the Double Surface Packing Co., and the Voorhees Rubber & Mfg. Co., and the bid of the Altai Rubber Co., of 78c. per ft. for uncoupled Calypso double jacket brand fire hose, guaranteed to stand a test pressure of 400 pounds, was accepted.

**South Bethlehem, Pa.**—Bids for storage batteries for rebuilding fire alarm system were received from the American District Telegraph Co., of Pennsylvania, the Gamewell Fire Alarm & Telegraph Co. and American Electric Fire Alarm Co.; on motion of Messrs. Brinker and Groman, bids were referred to the Fire Committee.

**Charleston, S. C.**—The Board of Fire Masters has awarded contract for new fire engine house on Huger st. to the McArtney Building Co., the lowest bidder, at \$6,790; work will be completed within 90 days.

**Seattle, Wash.**—The contract for two third-size fire engines at \$5,975 was awarded to the Nott Fire Engine Co., and for one second-size engine to the Ahrens Fire Engine Co. at \$6,275.

#### ELECTRIC RAILWAYS

**Anniston, Ala.**—W. H. Zinn has asked for an electric railway franchise; line will extend over entire city.

**Bay Minette, Ala.**—Dr. Greeno, Fairhope, is interested in construction of an electric line along the eastern shore of Mobile Bay in Baldwin county.

**Selma, Ala.**—Council has granted Selma Street and Suburban Railway Co. a franchise to extend railway on Water st.

**Denver, Col.**—Work on construction of proposed Colorado Interurban Electric Railroad line, to connect Denver, Brighton, Fort Lupton, Greeley and other towns in the northern coal district will commence in the near future.—C. H. Pierce, General Counsel.

**Tampa, Fla.**—The Tampa-Sulphur Springs Traction Co. will extend its railway along 8th ave. to 36th st. and on 5th ave. to 32d st.—L. Brill, General Manager.

**Hagerman, Id.**—H. A. Stroud is planning construction of electric railway.

**Chrisman, Ill.**—Paris & Northern Railway Co., Danville, has been granted 50-year franchise to operate electric railway; line will extend from Ridgefarm to Paris; distance 26 miles.

**Joliet, Ill.**—Highway Commissioners have granted a 20-year franchise to Chicago & Joliet Electric Railway Co. on Cass and Collins sts.

**Delphi, Ind.**—E. W. Bowen, Harry Baum, Lewis Hall, Al Brewer, U. W. Blue, M. G. Haun, T. J. Ryan, Dr. Carney and J. C. Smock have conferred with Flora business

men regarding proposed interurban line from this city through Flora to Burlington; it is proposed to equip the line with what is known as gasoline-electric cars, thus doing away with poles and all overhead work.

**Remington, Ind.**—Taxpayers of Carpenter Township have voted a tax of one per cent to assist in building the proposed Chicago & Lafayette Interurban Railroad; tax will yield about \$20,000.

**Marshalltown, Ia.**—City has received application of H. W. Darling, Chicago, Ill., for franchise to construct street railway system.

**Belfast, Me.**—Waldo Street Railway has completed surveys for electric railway from Camden to Belfast; work will begin the present season.—John A. Jones, Lewiston, Engineer.

**Westfield, Mass.**—The Western Massachusetts Street Railway Co. has petitioned Board of Selectmen for franchise to extend line.

**Moorhead, Minn.**—Local street railway company will rebuild tracks on 5th ave. south.

**Springfield, Mo.**—Springfield Traction Co. will soon start construction work on the Atlantic st. extension of city lines.

**Omaha, Neb.**—Councilman McGovern will introduce ordinance in Council compelling Omaha & Council Bluffs Street Railway Co. to provide slip rails.

**Asbury Park, N. J.**—The Township Committee has granted a 34-year franchise to Asbury Park & Sea Girt Electric Railroad Co. to operate a double-track railway over Main st.

**North Wildwood, N. J.**—Proposition of former Mayor Augustus Hilton to build trolley road from Cape May Court House to Wildwood Junction and from thence to Grassy Sound, Anglesea and on down to Wildwood Crest has met with general endorsement.

**Rahway, N. J.**—Movement has been started by prominent men of this city and Roosevelt to organize company for purpose of constructing trolley line between Rahway and the towns along the shore opposite Staten Island, between Sewaren and the Rahway rivers; D. H. Trombley, S. B. Moffet and Reuben Sharp, representing the Common Council of Rahway; Fred C. Hyer and Benjamin C. Mead, of the Civic Commission; Mayor Joseph Herman and a committee from Roosevelt Borough Council have adopted tentative plans.

**Brooklyn, N. Y.**—The Public Service Commission has adopted resolution granting permission to Brooklyn Heights Railroad Co. to change motive power of the Montague st. route from cable to overhead trolley.

**Sidney, N. Y.**—Board of Trustees has been petitioned by E. C. Bennett for franchise to construct an electric street railway from Sidney to Treadwell.

**Akron, O.**—Councilman Cronan has introduced ordinance requiring use of air and emergency brakes on all cars operated over Akron streets.

**Ironton, O.**—Thurman Braley, Proctorville, has applied for franchise to construct and operate electric railway from Ironton to Millersport.

**Lebanon, O.**—The Lebanon & Franklin Traction Co. will extend railway to Springboro; distance 4 miles.—Robert E. Kline, Callahan Bank Bldg., Dayton, General Manager.

**Redmond, Ore.**—Kirk White and Ben McCaffery, of Redmond, have been appointed a committee to secure right-of-way for electric line, starting from The Dalles and running through Madras, Pineville and Bend.

**Harrisburg, Pa.**—The Central Pennsylvania Traction Co. will build several extensions in this city; also rebuild the 3d and 6th st. lines.

**Meadville, Pa.**—Meadville Traction Co. is considering extensive improvements.

**West Newton, Pa.**—Pittsburg, McKeesport & Westmoreland Traction Co. has changed management and applied for a charter under the name of the Irwin & Herminie Traction Co.; \$40,000 bonds will be issued for improvements.

**Olivet, S. D.**—L. F. Phillips is interested in construction of an electric railway from Scotland, via Olivet to Wittenberg.

**Dickson, Tenn.**—Business interests are preparing to make organized effort to interest capitalists here and elsewhere in project to construct an electric railway from this city to Nashville; distance 40 miles.

**Nashville, Tenn.**—Cook Creek Railway and Electric Light Co., of Anderson county, has been incorporated; capital stock \$25,000.—Charles Loyd, J. P. Stanton, E. M. Beasley, J. S. Stanton and S. B. Faris, Incorporators.

**Austin, Tex.**—W. T. Bartholomew has filed charter of San Angelo Street Railway Co., having a capital stock of \$100,000; company proposes to add four more miles to the line this year.

**Greenville, Tex.**—Council is considering application of J. W. Crotty and L. A.

Miller, Dallas, Tex., for franchise to construct electric railway.

**Houston, Tex.**—County Commissioners have granted a 28-year franchise to Westmoreland Railroad Co. to construct an electric railway from Houston to the Westmoreland Farm; distance seven miles.—L. A. Anderson, Representative.

**Port Arthur, Tex.**—Port Arthur Traction Co. has been incorporated to construct street railway; capital \$200,000.—H. J. Meyers and A. H. Reeder, Dayton, O., also A. L. Davis, of Harris county, Incorporators.

**Waxahachie, Tex.**—E. M. Hopkins and Frank Westcott are interested in project to build line from Dallas to Waxahachie.

**Lehi, Utah.**—City will erect City Hall at First, North and Center sts.

**Bellingham, Wash.**—Council has received petition from Whatcom County Railway and Light Co. for franchise to extend line on Donovan ave.

**Edgewood, W. Va.**—Council has passed Rapid Transit Railway Co. franchise.

**Kanawha Falls, W. Va.**—Kanawha & Ohio Traction Co., Charleston, will be organized to construct 90-mile line.

**Wheeling, W. Va.**—County Commissioners have granted franchise to City & Elm Grove Railway Co. for a track around Wheeling Park and down Park View lane.

**Appleton, Wis.**—A. L. Gettys, 4057 Grand boulevard, Chicago, Ill., and C. R. Robins, of New York, are interested in project to construct interurban line from Appleton to Seymour.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**Winston-Salem, N. C.**—Contracts were awarded for the construction of the Southbound Railway, from Winston-Salem to Wadesboro; it is expected that the grading and masonry will be completed and bridges erected by June, 1910; successful contractors, ten in number, are: Rinehart & Dennis, Washington, D. C.; Nave Bros. Co., Portsmouth, O.; the Ryan Co., Portsmouth, O.; J. T. McKinney Construction Co., Lynchburg, Va.; Luck Construction Co., Roanoke, Va.; Ferguson Construction Co., New York; Walton Company, Falls Mills, Va.; McCurdy Construction Co., Marion, N. C.; J. R. McDowell & Co., Knoxville, Tenn.; J. T. Bennett, Danville, Va.

#### BRIDGES

**Cottonwood, Cal.**—Supervisors have ordered that the bridge across Cottonwood Creek at this place be made 273 ft. longer.

**Kennett, Cal.**—Business men are considering project of building bridge across the Sacramento at Kennett and making a three-mile road connection with the old California and Oregon wagon road.

**Merced, Cal.**—County will vote September 18 on \$300,000 bonds for bridges and culverts.

**Napa, Cal.**—Board of Supervisors has ordered Clerk to advertise for bids for construction of stone bridge across Dry Creek; cost \$5,000.

**Jacksonville, Fla.**—County Engineer Barnard will advertise for bids for construction of steel bridge over Julington Creek.

**Joliet, Ill.**—Highway Commissioners have decided to replace bridge over Spring Creek at Cass st. with a new structure.

**Albion, Ind.**—County Commissioners are considering construction of 50-ft. concrete arch bridge over the river.

**Anderson, Ind.**—The Indiana Union Traction Co. will soon receive bids for construction of three steel bridges over White River and one over Fall Creek.

**Columbus, Ind.**—Bartholomew County Commissioners are receiving bids for construction and repair of three bridges.

**Corydon, Ind.**—Harrison County Commissioners will construct bridge over Blue River.

**Martinsville, Ind.**—County Commissioners have recommended a \$14,000 appropriation for construction of nine new bridges.

**Bangor, Me.**—All bids opened at Bangor for repairs and reinforcements of foundations of the bridge across Penobscot River, between the cities of Bangor and Brewer, have been rejected.—P. H. Coombs, City Engineer.

**Marquette, Mich.**—County Commissioners will construct 90-ft. span steel bridge over the Michigamme River.

**Greenwood, Miss.**—Board of Supervisors of Leflore County has ordered \$20,000 iron bridge erected and maintained across Tallahatchie River.

**Wesson, Miss.**—Citizens of Rockport are urging erection of bridge across Pearl River at Rockport.

**Kansas City, Mo.**—City Engineer J. L. Darnell has recommended a \$250,000 bond issue for construction of eight concrete bridges.

**Kingsland, N. J.**—Town will request

Lackawanna Railroad to replace the present bridge over its tracks at the Ridge road crossing with a modern structure.

**Trenton, N. J.**—Board of Freeholders will receive bids at once for steel and concrete bridge over Honey Brook.

**Mott, N. D.**—County Commissioners are considering construction of a bridge over Mirror Lake.

**Alliance, O.**—Citizens have voted \$75,000 bonds for viaduct and two subways under Pennsylvania tracks and repaving Main st.

**Barberton, O.**—Council will at once erect viaduct over Cornell st.

**Coshocton, O.**—Tuscarawas County Commissioners have decided to borrow \$30,000 to build a bridge across the Tuscarawas River.

**Somerville, O.**—Council is considering erection of bridge over Macy's Branch.

**Springfield, O.**—Council is considering ordinance for constructing viaduct on Gal-lagher st.

**Youngstown, O.**—West End citizens are urging construction of a viaduct to eliminate the Westlake crossing.

**Tulsa, Okla.**—County will vote October 12 on \$700,000 bonds for bridges, roads, City Hall and Court House.

**Indiana, Pa.**—Supervisors of Green Township will receive bids for the building of concrete abutments for a bridge across Vertical Creek.—H. E. Bence, Secretary, Doxonville.

**Pittsburg, Pa.**—Bureau of Construction will receive bids early next year for Larimer ave. bridge over Beechwood boulevard; \$175,000 bonds are available.—N. F. Sprague, Superintendent.

**South Bethlehem, Pa.**—Commissioners of Northampton and Lehigh Counties have decided to rebuild intercounty bridge at Walnutport; it will be a five-span iron structure, with 20-ft. roadway, constructed upon the present stone piers at cost of \$35,000.

**Knoxville, Tenn.**—City Engineer is preparing plans for a bridge across First Creek at Glenwood ave.—J. W. Fleniken, Chairman Board of Public Works.

**Newport, Tenn.**—Cocke County Pike Commission has not yet let contract for construction of steel bridge across Pigeon River.—B. W. Hooper, Secretary.

**Brady, Tex.**—Commissioners' Court is considering election on \$40,000 bridge and road bonds.

**Puyallup, Wash.**—Board of Trade is urging erection of substantial wagon bridge over Puyallup River.

**Seattle, Wash.**—City Engineer R. H. Thomson has asked for \$96,725 for construction of bridges during year.

**Wheeling, W. Va.**—Bellaire, Benwood and Wheeling Bridge Co. has been formed to construct bridge across Ohio River at Benwood.—C. A. Bowers, E. B. Bowle, W. L. Gilliland, H. W. Campbell and G. A. Blackford, Incorporators.

**Wheeling, W. Va.**—Consulting Engineer Herman Laub will prepare plans for new Market st. bridge.

**Montreal, Que., Can.**—City will be compelled to repair the bridge across St. Catharine st. in the east end; cost \$62,000.

## BIDS RECEIVED AND CONTRACTS AWARDED

**Huntsville, Ala.**—Council has awarded contract to Tennessee Concrete & Construction Co., Knoxville, Tenn., at \$8,886, for constructing a 3-span concrete bridge over Pinhook Creek.

**Chicago, Ill.**—Contract for reconstructing bridge across the west fork of the south branch of the Chicago River, at Kedzie ave., including approaches, bids opened August 9, has been awarded to Geo. P. Cullen, 78 La Salle St., for \$6,226.

**Lockport, Ill.**—The Joliet Bridge & Iron Co., of Joliet, has secured contract to construct 10 bridges between Lockport and Channahon for the Illinois and Michigan Canal Commissioners.

**Pekin, Ill.**—The Tremont Bridge & Concrete Co., Tremont, has been awarded contract, at \$7,089, for constructing a steel bridge over the Mackinaw River.

**Taunton, Mass.**—W. S. Rendle & Son, of East Boston, were awarded contract for building the proposed new bridge over Mill River on West Adams st. for \$7,400, or more than \$1,000 less than the estimate of the Special Committee of the Council for this part of the work; there were six bidders.

**Port Huron, Mich.**—James O'Sullivan & Son have secured contract at \$17,000 for the erection of the new overhead bridge on Military st.

**Red Wing, Minn.**—Contract for two 45-ft. spans concrete bridge let to Illinois Bridge Co., of Chicago, for \$4,988.—A. E. Rhame, City Engineer.

**Rockford, Miss.**—All bids for building a steel bridge over Pearl River were rejected; bids ranged from \$14,000 to \$18,000.

**Bloomfield, N. J.**—The Board of Free-

holders has awarded contract to construct the bridge at West st. to the Goeller Iron Works and A. E. Sanford at \$4,340.

**Chatham, N. J.**—Joint Bridge Commission of Morris and Union counties have awarded contract to construct the reinforced concrete and steel arched steel bridge over Morris Turnpike to the Lehigh Construction Co. at \$12,500.

**Trenton, N. J.**—Board of Freeholders has awarded contract to the McGovern Construction Co. for a combined steel and concrete bridge over Mirey Run on the Edinburg road; bids were as follows: McGovern Construction Co., \$3,690; Newton A. K. Bugbee & Co., \$3,750; John H. Hurley, \$4,130.

**Yonkers, N. Y.**—Contract for constructing the bridge over the Nepperhan River at Center st. has been awarded to Molloy & Murray, at \$7,040.

**Cleveland, O.**—Baltimore & Ohio R. R. Co. has awarded contracts to construct a double-track Sherzer rolling lift bridge across Cuyahoga River at Cleveland, as follows: Superstructure, 1,100 tons, to Pennsylvania Steel Co., Girard Bldg., Philadelphia, Pa., and substructure to Chas. A. Sims & Co., of Philadelphia. Estimated cost, about \$275,000. The bridge will be 200 ft. long to center of bearings and will have 2-deck plate girder approach spans 43 ft. long.

**Mansfield, O.**—County Commissioners have awarded contracts for construction of culverts on pike roads of Cass Township and also for several bridges and culverts of the county; bids for the construction of culverts in Cass Township were divided into two sets, the contracts being awarded to the lowest bidders.

Set No. 1 was awarded to Lucas & Boals on their bid of \$384; set No. 2 to F. F. Schnitzer & Sons, on their bid of \$476.76; set No. 3 to Lucas & Boals on their bid of \$458.

Stevenson bridge to Lucas & Boals, \$418. Culvert at No. 2 school house, Monroe Township, Simon Brown, \$137.85.

Kirk bridge, Jacob Hisey, \$90. Nelson bridge, Jacob Hisey, \$129. McMillen bridge, Jacob Hisey, \$129.

**Springfield, O.**—The Board of County Commissioners, Aug. 9, awarded the contract for rebuilding superstructure for bridge known as Moore's Lime Co. Bridge No. 1008, Springfield Township, to the Home Engineering & Construction Co., Canton, at \$7,987.

**Youngstown, O.**—Capital Construction Co., Columbus, is low bidder on construction of proposed Spring Common bridge; total amount of the bid on superstructure work is \$58,651; with a buckle plate floor the bid provides for an increase of \$2,180. Youngstown Construction Co. is the low bidder for the frame temporary bridge with a bid of \$4,933.

**Altoona, Pa.**—Bids were received for five county bridges and contracts awarded for two of them, the bridge over Mill Run, at Sixth ave. and 31st st., to H. E. Stall & Sons, and the Clapper bridge over Canoe Creek, in Frankstown township, to W. H. Herr & Sons. On the Mill Run bridge there were eight bids, as follows: Carothers Construction Co., \$2,470.77; H. E. Stall & Sons, \$2,674.86; Ferro Concrete Co., \$2,730; W. L. Pennock, \$2,830.30; W. H. Herr, \$2,845; Vipond Construction Co., \$2,927; A. Buchanan, \$3,184; J. P. Harney, \$3,500. The Carothers Co. was low, but the Commissioners' Engineer, W. H. Hinkle, claimed that the bid did not come up to the specifications, and it was rejected, and the contract was awarded to the next lowest bidder. For the Clapper bridge there were six bids, and W. H. Herr & Sons were low and contract was awarded to them. For the other three bridges, viz., over Canoe Creek at E. E. Brua's; over Piney Creek at Royer and over Halter Creek at Albright's, in Taylor Township, the Ferro Concrete Company, of Harrisburg, was the lowest bidder, but the County's Engineer and Attorney both claimed that their bid was not in accordance with the specifications, and it was accordingly turned down, as were all the other bids, which were considered too high.

**Epensburg, Pa.**—Fort Pitt Bridge Co., House Bldg., Pittsburgh, has been awarded contract for iron work for proposed bridge across Pennsylvania R. R. tracks at South Fork.

**Norristown, Pa.**—Montgomery County Commissioners have made the following award of contracts: Stone, double-arch bridge over Sciota Creek, Frederick, to James Smith, for \$1,984; raising Sanatoga bridge two ft. and reshingling and painting it, to John H. Lloyd, for \$158.87; reroofing Linfield bridge, to E. S. Hartenstein, for \$79.90.

**Chattanooga, Tenn.**—The Cincinnati Southern Railroad has awarded a contract of \$125,000 for the removal of 200,000 cu. yds. of earth in preparation for the construction of a new bridge over the Kentucky River at High Bridge, Ky. The new

bridge will be 306 ft. above low-water mark, one of the highest in the world.

**Belinda, Wash.**—County Commissioners have awarded contract for constructing the Euclid Malton Bridge over the Yakima River to the International Contract Co., Seattle, at \$13,564.

**Bellingham, Wash.**—A. J. Riffe and W. M. White, city, have secured contract at \$12,981, for the removal of drawbridge from old channel wing dam and pile the trestle work over old channel and approaches to same.

**Mabton, Wash.**—International Contract Co., Seattle, has secured contract for constructing a 120-ft. and a 100-ft. combination span for \$3,235 and a 180-ft. steel span for \$4,289; also four concrete piers at \$16.80 per cu. yd.—W. B. Newcomb, Deputy County Auditor.

**Wheeling, W. Va.**—Dixon & Pickett have been awarded a contract for constructing a concrete culvert between Hanover and Walnut sts.

**Wausau, Wis.**—A. F. McGillis, Menominee, Mich., has secured contract for constructing the Leahy & Beebe Bridge, on Bridge st., at about \$5,000.

## MISCELLANEOUS

**Greensboro, Ala.**—County Commissioners have accepted plans for remodeling jail; cost \$15,000.

**Tuscaloosa, Ala.**—County Commissioners have rejected plans for proposed jail; new plans will be asked.

**Berkeley, Cal.**—Sloan Manufacturing Co. has been granted permission to erect garbage destroyer.

**Los Angeles, Cal.**—Citizens of this city and San Pedro will vote soon on \$2,000,000 for development of outer harbor at San Pedro and \$1,000,000 for betterment of inner harbor.

**Key West, Fla.**—Citizens will vote November 9 on \$240,000 municipal improvement bonds.

**Peoria, Ill.**—Mayor Woodruff is favorable to construction of garbage plant; cost \$25,000.

**Indianapolis, Ind.**—Board of Public Works is considering plan for collecting ashes from apartment houses and flat buildings; present contract includes only private dwellings.

**Indianapolis, Ind.**—Council is considering ordinance appropriating \$11,000 for Board of Park Commissioners; Dr. Henry Jameson, President of Board of Park Commissioners, has suggested plan for broad plaza and State civic center stretching from the State house to Military Park and for a wide boulevard and parkway from Military Park to White River.

**Baltimore, Md.**—Councilman L. D. Greene is urging plan to connect Lexington Market at Paca and Greene sts. by roofing.

**South Hadley Falls, Mass.**—Town is considering erection of Town Hall.

**Tylertown, Miss.**—Town Board has had plans prepared for new jail.

**Omaha, Neb.**—Judge Berka, First Ward Councilman, is advocating purchase of block of ground near center of city for recreation park.

**Flemington, N. J.**—Board of Village Trustees is receiving specifications for public library building.

**Millburn, N. J.**—Township is considering establishment of municipal garbage system.

**Trenton, N. J.**—Board of Freeholders will receive bids at once for 48-in. iron pipe culvert and retaining wall in Hopewell Township.

**Vetnor City, N. J.**—Council is considering establishment of public park on beach.

**Clovis, N. M.**—Curry County has sold \$59,000 jail and Court House bonds.

**Newburgh, N. Y.**—Mayor McClung has recommended adoption of police patrol box system.

**Oswego, N. Y.**—Citizens are urging purchase of an automobile patrol wagon.

**Akron, O.**—Trustees of Sinking Fund Commission will appoint Park Commission of four members to take exclusive charge of parks; extensive improvements will be made.

**Alliance, O.**—Citizens have voted \$75,000 to build two subways under Pennsylvania tracks, erect viaduct and repave Main st., but defeated \$40,000 bond issue for City Hall.

**Tulsa, Okla.**—County will vote October 12 on \$700,000 bonds for City Hall, roads, bridges and Court House.

**Portland, Ore.**—Police Committee has decided to erect two police sub-stations on East Side.

**Portland, Ore.**—Council has passed ordinance appropriating \$2,000 for automobile for City Health Officer Wheeler; is considering construction of retaining wall along East Stark st.; cost \$5,000.

**Lebanon, Pa.**—Dr. E. H. Gingrick, Board of Health, has urged need of garbage collection and reduction system; Jas. Levan is seeking contract.

**Philadelphia, Pa.**—With advent of As-

sistant Director of Wharves, Docks and Ferries Hasskari as head of that department, plans are being prepared for establishment by city of a municipal dredging plant that will enable the city to deepen docks and remove shoals in the Delaware and Schuylkill rivers; it is estimated that \$175,000 will be sufficient to provide the dredges, scows and tugboats.

**Pittsburgh, Pa.**—Plans have been completed for the construction of three incinerating plants; \$185,000 has been appropriated.—John F. O'Toole, Superintendent Bureau of Highways and Sewers.

**Pittsburg, Pa.**—Subway completed and carrying cars in less than four years is proposition officials of the Pittsburg Subway Co. are preparing to make to the Subway Committee of Councils.

**Pittsburg, Pa.**—Grounds of West Penn Hospital at head of 28th st. are about to be converted into a public park.

**Elizabethton, Tenn.**—Ordinance has passed Council carrying a bond sale to raise \$3,500 to complete the wall along the east bank of Doe River for the further protection of the old town.—Lee F. Miller, Mayor.

**Bay City, Tex.**—County will vote September 11 on erection of new jail.

**Brady, Tex.**—Commissioners' Court is considering location of proposed jail building.

**Coeburn, Va.**—Coeburn Light and Power Co. is contemplating installation of ice plant and water works system.—T. B. Hellman is interested.

**Lynchburg, Va.**—Committee on Finance has rejected all bids received on \$400,000 bond issue.

**Portsmouth, Va.**—Council has appropriated funds to defray expenses of Committee, now visiting New York to inspect ferry boats.

**Seattle, Wash.**—Superintendent L. B. Youngs has recommended that all bids received for 5,665 street signs be rejected and new ones received; cost \$1,412.

**Seattle, Wash.**—Library Board has asked for \$65,000 for construction of branch library on 3d ave.

**Seattle, Wash.**—City Engineer R. H. Thomson has asked for \$189,000 for three garbage destructors and sites.

**La Crosse, Wis.**—John A. Nolen, landscape architect, has prepared plans for the improvement of Houska's Park.

#### BIDS RECEIVED AND CONTRACTS AWARDED

**Washington, D. C.**—The Sloan & Chase Mfg. Co. of Newark, N. J., has been awarded contract for supplying the Census Bureau with 100 tabulating machines at \$478 each and 300 punching machines at \$250 each; punching machines formerly had been quoted to the Government at \$600 apiece.

**Augusta, Ga.**—The North Alabama Construction Co. was awarded contract August 19 by the Canal and River Commission for digging the Beaver ditch, for \$19,450. The work consists of 100,000 cu. yds. excavation and clearing 20 acres of land. Other bids were: W. J. Oliver, Knoxville, Tenn., \$40,000; T. J. Shea, New Orleans, about \$40,000; A. J. Twiggs, Augusta, Ga., \$21,000; G. A. McWilliams, Walnut, Ill., \$20,000.

**Davenport, Ia.**—The Board of Public Works received the following proposals for rock for Harbor line: Le Claire Stone Co., \$1.85 per cu. yd. on barge, unload at once; \$2 per cu. yd. on barge, 24 hours time; \$1.50 per cu. yd. on cars. Bettendorf Stone Co., \$2.52 per cu. yd. Linwood Quarries Co., \$1.50 per cu. yd. John Fey, \$2.16 per cu. yd. Contract was awarded to the Linwood Quarries Co.—Thomas Murray, City Engineer.

**Louisville, Ky.**—Board of Public Safety has opened bids for new police station; bid of George H. Rommel was the lowest, but the contract was not awarded; approximate cost of the building will be \$10,000.

**Lawrence, Mass.**—The Board of Trustees of the Tuberculosis Hospital, with Mayor White, opened the bids for the new building and contracts were awarded to the lowest bidders on the various portions of construction, amounting in the aggregate to \$22,280. The contracts awarded were: Jacob Wagenbach, \$1,750 for excavation; John W. Keegan, \$2,997, plumbing; Bridie Grimes & Co., \$1,041, steam fitting, and E. A. Peabody & Son, \$16,492, brick and wood work, painting and plastering. Trustee Flanagan, who is a builder, will supervise the work.—Dr. A. L. Siskind, James Flanagan, James Lanigan and Atty. Fred Eaton, Trustees.

**Seattle, Wash.**—Contract for hauling garbage has been awarded to Axel Lindgren for \$175 a month; W. P. Vietch had a bid in for \$225 a month.

**Butte, Mont.**—Contracts have been awarded by Council for the erection of new emergency hospital and detention department to J. H. Turner, who will put additional story on the patrol station for housing the new departments, his offer being \$4,693; the only other bidder, G. H. Worman, asked \$4,766. The estimate of Building Inspector McPherson was \$4,800. The Kruger Plumbing & Heating Co. got the contract for the plumbing work at \$1,588; W. J. Kileen's bid was \$1,834.25 and that of the Esche Co., \$1,600; the Plumbing Inspector's estimate was \$2,000.

**Port Jervis, N. Y.**—The Clerk read sealed bids for the alteration of the municipal building as follows: W. W. Hendrickson & Son, \$1,399; Chant & Elliot, \$1,448; George A. Post, \$1,364; Floyd S. Goble, \$2,119.30; contract was awarded to W. W. Hendrickson & Son, the lowest bidder, and the building committee was employed to engage a supervising architect.

**Nowata, Okla.**—The Queen City Construction Co. of Muskogee has been awarded the contract for building a City Hall for \$11,500.

**Media, Pa.**—Contract for collecting the garbage has been awarded to Samuel Stewart, his bid being \$250. The only other bidder was Charles Geary, the present collector, whose bid was \$600.

**Philadelphia, Pa.**—Contracts were let by the Navy Department at Washington, D. C., to Philadelphia concerns for dredging and construction work at League Island Navy Yard; the work will cost over \$4,000,000. The money has been apportioned as follows by the Navy Department: American Dredging Co., \$293,625; Atlantic Dredging Co., \$102,475; and the American Paving and Construction Co., \$23,000; work will start at once; the work to be done by the American Paving and Construction Co. is the extension of a culvert under Broad st., for which \$23,000 has been set aside.

**Seattle, Wash.**—W. M. Price, who was awarded contract on May 28 for 5,665 street signs at a total cost of \$1,412, has notified the Board of Public Works that his firm desires to withdraw the bid because the names to be placed on the signs had not been furnished by the Water and Light Department in charge of the work. Superintendent L. B. Youngs recommended to the Board that all bids for signs be rejected and new ones received.

#### TOO LATE FOR CLASSIFICATION

##### STREET IMPROVEMENTS

**Ensley, Ala.**—Committee on Public Improvement has submitted report to lay sidewalks and curbing on about 20 miles of street.

**Mobile, Ala.**—City will soon let seventh paving contract.—Chief Engineer Smith, Board of Public Works.

**Macon, Ga.**—Contract for 50,000 brick will be let by city within next few weeks so that proposed paving on upper Washington ave. may be completed.

**Chicago, Ill.**—Bids will be received by Cook County Commissioners Aug. 30, 1:30 P.M., for approximately 500 sq. yds. creosote block paving on Ewing st.—Wm. McLaren, Superintendent of Public Service.

**Keokuk, Ia.**—Bids will be received by Board of Public Works Aug. 30 for paving with macadam 10th st.—J. Ross Robertson, City Engineer.

**Rochelle, Ill.**—Etna Engineering Bureau, 125 La Salle st., Chicago, has made plans for 30,000 yds. of brick paving and storm water sewers in connection with paving; work will be advertised shortly.

**Lawrence, Kan.**—City has decided to pave two streets.

**Leavenworth, Kan.**—City has decided to curb Columbia and 2d aves.—Jos. O'Neil, City Engineer.

**Eveleth, Minn.**—City will purchase ten-ton road roller and rock crusher with capacity of 20 tons per hour, gyratory, weighing about 15,500 pounds.

**Osborn, Mo.**—Bids will be received Sept. 1 for constructing 1,587 lin. ft. of granite sidewalk.—P. J. Schmitz, Chairman Committee.

**Atlantic City, N. J.**—Finance Committee has voted to recommend that widening of the boardwalks be carried out as originally planned, even though the cost be \$100,000. Wooden way will be widened 20 ft. from Texas ave. to Albany ave., while 20 ft. more will be added between Illinois ave. and Young's new pier.

**Atlantic City, N. J.**—Bids will be received by the Board of Freeholders of Atlantic County Sept. 4, 11:30 A.M., postponement, for grading and macadamizing Shore road.—E. D. Rightmire, County Engineer, 108 Bartlett Bldg., Atlantic City.

**Gloucester, N. J.**—Surveyor Powell is

preparing specifications for street improvements.

**Rochester, N. Y.**—Bids will be received by State Commission of Highways, Albany, Aug. 27, 1 P.M., for repair or resurfacing various roads in Monroe County.—Milton W. Wilbur, Division Engineer.

**Grand Forks, N. D.**—City has decided to pave University ave.

**Kenmare, N. D.**—Bids will be received Sept. 1 for road work.—Peter Anderson, Clerk Kandiyohi Township.

**Columbus, O.**—Morrow County Commissioners will receive bids Sept. 3, 11 A.M. for \$53,958.96 road and other improvement bonds.—W. C. McFarland, Auditor.

**Kennedy Heights, O.**—Bids will be received Sept. 11, noon, for improving portions of Fern and Ridgeway aves.—O. W. Bennett, 711 Fourth National Bank Bldg., Cincinnati, Village Clerk.

**Orville, O.**—City has awarded \$11,600 street bonds to Citizens' National Bank, Wooster, at \$349.50 premium.

**Portsmouth, O.**—City has sold \$10,000 street extension bonds to Atlas National Bank, Cincinnati, at \$100 premium.

**Ardmore, Okla.**—Citizens have voted \$200,000 road and bridge bonds.

**Gallitzin, Pa.**—Bids will be received until Sept. 2 for 8,000 sq. yds. of brick paving.—D. W. Dillman, 47 and 49 Altoona Trust Bldg., Altoona, Engineer.

**Fort Worth, Tex.**—Citizens have voted \$100,000 street paving bonds.

**Fort Worth, Tex.**—City Commission has ordered paving of College ave. with bituminous pavement.

**Hillsboro, Tex.**—Citizens will vote September 18 on \$250,000 road bonds.

**Waxahachie, Tex.**—Justice Precinct No. 5 has defeated proposition to issue \$100,000 bonds for construction of permanent roads.

**Weatherford, Tex.**—Parker County will vote September 18 on \$100,000 road improvement bonds.

**Tacoma, Wash.**—Council has ordered improvement of Local Improvement District No. 422.—L. W. Roys, City Clerk.

#### BIDS RECEIVED

**Salem, N. J.**—Council has awarded contract for repairing and oiling its streets

to Difenderfer Co., of Philadelphia, for \$2,270.

**Hamilton, O.**—Service Board has opened bids to pave Millville ave., North 10th and South Front sts. with sheet asphalt. Bids were received from the Andrews Asphalt Paving Co., the Barber Asphalt Paving Co. of New York, and George Peters of Sycamore, Ill. Andrews bid lowest, \$1.95 a yd. The Barber company bid \$1.96 and Peters \$2. The bids were referred to Engineer Dillon for tabulation.

**Salt Lake City, Utah.**—Board of Public Works has given P. J. Moran, official contractor for the city, another contract. His bid for paving West Temple, from 5th South to 9th South, and 5th South, between Main and 1st West sts., was accepted by the Board. The contract price is \$100,101.84, or \$9,949.75 above the City Engineer's estimate. Moran asks 8¢ a yd. for excavating, as against 70¢ a year ago, and \$2.25 for laying the concrete base, as against \$2.05 a year ago for the same work.

#### SEWERAGE

**Gardner, Cal.**—Sanitary Board will soon call election for bonds for sewers.

**Adel, Ia.**—Bids will be received Aug. 27, 11 A.M., for the construction of county drain No. 10.—H. P. Lods, County Auditor.

**Rochelle, Ill.**—Etna Engineering Bureau, 125 La Salle st., Chicago, has made plans for storm water sewers in connection with plans for 30,000 yds. of brick paving.

**Louisville, Ky.**—Bids will be received by Commissioner of Sewerage Aug. 27, noon, for construction of a sewer, known as the South Louisville Branch-Section "C" contract No. 51.—H. P. Eddy, Consulting Engineer, 14 Beacon st., Boston, Mass.; J. B. F. Breed, Chief Engineer.

**Kalamazoo, Mich.**—Bids will be received Aug. 28, 10 A.M., for the extension of No. 4 township drain.—H. E. Thompson, Drain Commissioner.

**Ft. Robinson, Neb.**—Bids will be received by Constructing Quartermaster Sept. 6, 11 A.M., for addition to sewer mains.

**Atlantic City, N. J.**—Bids will be received Sept. 13, postponement, for the construction of a part of the storm water drainage system, including approximately 6,650 lin. ft. of brick and reinforced con-

crete and terra cotta drains, from 10 in. in diameter, to 8 ft. wide, with manholes, catch basins and inlets.—E. D. Rightmire, City Engineer.

**Cleveland, O.**—Bids will be received September 8, 11 a.m., for the construction of a cast iron pipe culvert on Columbia road, Olmsted Township.—W. F. Black, Clerk, Board of Commissioners.

**Girard, O.**—Bids will be received by village council, September 3, noon, for the construction of sewers and house connections.—J. F. McFarlin, Village Clerk.

**Dunmore, Pa.**—Bids will be received September 7, readvertisement, for construction of sewers in Third and Fourth districts.

**Fort Worth, Tex.**—Citizens have voted \$150,000 sewer extension bonds.

**Grand Rapids, Wis.**—Bids will be received August 27, 2 p.m., for the construction of a 12-in. sewer on 10th st.—Frank Pomainville, Chairman Board of Public Works.

**Merrill, Wis.**—Etna Engineering Bureau, 125 La Salle st., Chicago, Ill., has been retained by city to design system of relief sewers and to superintend reconstruction of car track system; part of work will probably be done this year.

### WATER SUPPLY

**Waukegan, Ill.**—Bids will be received August 26 for construction of a 6-in. cast iron water supply pipe, with the necessary valves and fire hydrants.—F. W. Buck, President Board of Local Improvements.

**Monticello, Ia.**—Bids will be received, August 30, 6 p.m., for the construction of a reinforced concrete addition to the present water works reservoir.—Wm. H. Kimball, 651 First National Bank Bldg., Chicago, Engineer.

**Ft. Robinson, Neb.**—Bids will be received by Constructing Quartermaster, September 6, 11 a.m., for addition to water mains.

**Kearney, Neb.**—Citizens have defeated proposition to issue \$150,000 bonds for purchase of city water plant from American Water Co.

**Columbus, O.**—Bids will be received by the Board of Managers of the Ohio Penitentiary, September 10, for water softening plant.

**Delphos, O.**—City has awarded \$20,000 water bonds to Citizens' National Bank, Wooster, at \$380 premium.

**Muskogee, Okla.**—Citizens have voted \$200,000 bonds; money will be used to purchase water works plant, electric lighting and power plant and to build city hall.

**Harrisburg, Pa.**—City is considering erection of standpipe in Reservoir Park.

**Pittsburg, Pa.**—City will begin construction of South Side pumping station this fall; cost \$75,000.

**Johnson City, Tenn.**—City will vote September 11 on \$375,000 bonds for building new water works system; new source of supply is already secured from the Unaka mountains, 11 miles distant; whole amount of water already secured by option will afford daily flow of 7,000,000 gallons.—W. M. Dunlay, City Engineer; W. G. Kirkpatrick, Jackson, Miss., Consulting Engineer. Address E. E. Ellsworth, City Treasurer.

**Fort Worth, Tex.**—Citizens have voted \$200,000 water extension bonds.

**Sherman, Tex.**—City Engineer Thurman has completed plans for some extensive improvements in extension of the water mains of the city; estimated cost will be \$15,000.

**Grand Rapids, Wis.**—Bids will be received August 27, noon, for construction of a water works system and infiltration wells.—Frank Pomainville, Chairman Board of Public Works.

**South Milwaukee, Wis.**—Bids will be received by Board of Public Works, September 7, 8 p.m., for installation of a filtering plant of 1,000,000 or 1,500,000 gals. per day capacity.—W. G. O'Neill, City Clerk.

### LIGHTING AND POWER

**Macon, Ga.**—Council has appropriated \$3,000 for underground wires.

**Clarksville, Mo.**—E. N. Moody has formed company to install electric light plant.

**Hastings, Neb.**—Council has not as yet purchased a steam condenser.

**Bayonne, N. J.**—Business Men's Association will request Council to make an appropriation for white way on Broadway.

**Haddonfield, N. J.**—Borough Council has accepted plans for enlargement of power house.

**New York, N. Y.**—Bids will be received by the Department of Parks, August 26, for installation of electric light fixtures in the new addition (E) of the Metropolitan Museum of Art, Central Park.—Henry Smith, President.

**Muskogee, Okla.**—Citizens have voted \$200,000 bonds; money will be used to purchase electric lighting and power plant and water works and to build city hall.

**Muskogee, Okla.**—Application for franchise for second electric lighting and

power plant, in favor of McHenry & Co., of Louisville, has been refused by Council; Council demanded that franchise carry option purchase clause in favor of city, and promoters of new franchise refused to concede this.

**Pottstown, Pa.**—Pottstown Conduit Co. will apply for charter to lay conduits for electric wires and gas pipes.

**Centralia, Wash.**—Hayes & Felton, Tenino bankers, have proposition whereby headwaters of the Skookumchuck River will be harnessed to furnish commercial power for Tenino and Bucoda.

**Chewelah, Wash.**—Ione Water & Power Co. has been incorporated; capital \$50,000.—Charles P. Moeser, New York, President.

### BIDS RECEIVED

**Sioux City, Ia.**—Council has opened bids for construction and equipment of a one-story brick boiler house for the city building as follows: John J. Keefe, \$1,611.40; LaVelle & Hogan, \$6,410; F. J. Sulzbach, \$1,264; Gearen & Zeigler, \$6,885; Sioux City Boiler and Sheet Iron Co., \$6,500; Louis Kettleson, \$3,550. Question without argument was referred to the Building Committee and the City Engineer.

### FIRE EQUIPMENT

**Gardner, Cal.**—Gardner Improvement Club is considering plans for erection of fire house.

**Manchester, Conn.**—South Manchester fire district has voted to purchase \$5,000 automobile chemical and hose wagon; \$1,800 is available for new hose.

**Macon, Ga.**—City Electrician C. H. Humphreys has asked for \$3,000 to complete fire alarm system.

**Ft. Robinson, Neb.**—Bids will be received by Constructing Quartermaster Sept. 6, 11 A.M., for the construction of a fire station.

**Camden, N. J.**—Council has decided to purchase an automobile for fire chief.

**Brooklyn, N. Y.**—Architect H. W. Billard has prepared plans for a \$44,000 engine house.

**Hillsboro, N. D.**—Bids will be received by Council Sept. 6, 8 P.M., for furnishing apparatus to the Fire Department.—M. B. Davies, City Auditor.

**West Grove, Pa.**—Local fire company is securing funds for purchase of uniforms.

**Fort Worth, Tex.**—Citizens have voted \$100,000 bonds for public buildings, including erection of two fire stations.

### ELECTRIC RAILWAYS

**Mayfield, Cal.**—Peninsular Railway Co. has petitioned for franchise for an electric road.

**Wilmington, Del.**—People's Railway has applied for franchise to extend tracks on King st.

**St. Louis, Mo.**—A double-track high-speed electric line, pursuing the shortest possible route between Kansas City and St. Louis, is object of a company which will be incorporated at Jefferson City with a capital of \$15,000,000; W. D. Nevin and Harry Insley, Denver; Daniel F. Miller, several Kansas City bankers and W. H. Chase, B. F. Gray and Edgar D. Tilton, St. Louis, are named as the leaders in organization.

**Morristown, N. J.**—David Cling, President of the Morris County Traction Co., and William Stryker, Secretary of the Morris & Essex Electric Co., have signed agreement to install paraphernalia and new power house for trolley line through Speedwell ave. to run from this city to Morris Plains.

**Bentleyville, Pa.**—Council has granted franchise to Pittsburg, Monongahela & Washington Railway to build a street railway.

**Merrill, Wis.**—Etna Engineering Bureau, 125 La Salle st., Chicago, Ill., has been retained by city to superintend reconstruction of car track system; part of work will probably be done this year.

### BRIDGES

**Grand Rapids, Mich.**—Bids will be received by Board of Public Works Aug. 26, 8 P.M., for constructing a foot bridge on the Grand Trunk railroad bridge across the Grand River.—Sam. A. Freshney, Secretary.

**Albion, N. Y.**—Town Board of Gaines has signed petition requesting Advisory Board of State Engineers for improvement of Barge Canal to favorably consider proposition of lift bridge at the grade over Erie Canal at Eagle Harbor.

**Bucyrus, O.**—Bids will be received by Board of Commissioners of Crawford County Sept. 2, noon, for the construction of the substructure and superstructure for the Cooper bridge in Liberty Township.—J. I. Smith, County Auditor.

**Jefferson, O.**—Bids will be received Sept. 6, 1 P.M., for constructing a reinforced concrete culvert, New Lyme Township.—J. S. Matson, County Surveyor.

**Ardmore, Okla.**—Citizens have voted \$200,000 bridge and road bonds.

**Faulkton, S. D.**—Bids will be received Sept. 7, 2 P.M., for the construction of five bridges.—W. H. Race, Auditor.

### BIDS RECEIVED

**Oakland, Cal.**—Following road work has been let by Board of Supervisors: To J. A. Scott, concrete arch bridge on Prescott st. at Gold arch bridge, on Prescott st. at Goldman ave., \$7,400; P. H. Hoare, macadamizing McConaghay road, \$2,560; portion of road No. 1762, \$2,625, and 2,500 ft. of Castro Valley road, \$1,420; T. B. Russell, reservoir in Castro Valley road district, \$1,794; Hyde Harjes Co., steel and concrete bridge across Alameda Creek, on the Bell ranch road, near Decoto, \$10,399.

**Leesburg, Va.**—Drury Bridge Co., York, Pa., has been awarded contract for bridges over Tuscarora Creek and over creek on road from Ashburn to Arcola.

### MISCELLANEOUS

**Washington, D. C.**—Wharf Committee has recommended \$3,000,000 improvements to city harbor front.

**Washington, D. C.**—District Commissioners will recommend, when estimates for District for next fiscal year go to Congress, that horse-drawn vehicles, such as ambulances, engines, fire wagons, engines, trucks and patrol wagons be replaced by motor vehicles.

**Holyoke, Mass.**—City has received three plots of ground for playground purposes.

**Camden, N. J.**—Council is considering advisability of purchasing motorcycles for mounted police and dispose of horses; automobile will be purchased for Fire Chief.

**Delphos, O.**—City has awarded \$20,000 park bonds to Hayden, Miller & Co., at \$1,428 premium.

**Muskogee, Okla.**—Citizens have voted \$200,000 bonds; money will be used to build city hall and to purchase water works plant and electric lighting and power plant.

**Johnstown, Pa.**—Council has decided to purchase auto police patrol for police department.

**Fort Worth, Tex.**—Citizens have voted \$100,000 public building bonds, including police headquarters and four other buildings.

### INCORPORATIONS

**Acker-Nightingale Construction Co.**, New York, N. Y.; designing, construction, engineering, architecture, etc.; capital, \$2,500. Incorporators: Craig E. Nightingale, Rye, N. Y.; E. Saler Acker, Cresskill, N. J.; George A. Acker, Haworth, N. J.

**Albion Shale Brick Co.**, Albion, Ill.; manufacturing clay and shale products; capital, \$20,000. Albion Shale Brick Co., Albion, Ill.

**Aston Electric Light, Heat and Power Co.**, Delaware County; capital, \$5,000. H. E. Marlor, Philadelphia.

**Automatic False Alarm Detector Co.**, Wilmington, Del.; capital, \$100,000. Incorporators: J. Banks Nicholson, Dan B. Miller, Jr., Fred C. Geiger, Washington, D. C.

**The Birmingham Water, Light and Power Co.**, Birmingham, Ala. Incorporators: W. L. Friel, Charles E. Glover, S. W. Hawkins and T. H. Friel, all of North Birmingham.

**Borough Asphalt Co.**, Brooklyn, New York, N. Y.; manufacturing, vend and lay asphalt products; capital, \$10,000. Incorporators: Harry F. Langhaus, Bayonne, N. J.; Adam Seipel, 1260 Nelson ave., Bronx; Henry Wittel, Astoria, N. Y.

**The Dexter-Chapman Engineering Co.**, Arlington, N. J.; capital, \$25,000. Incorporators: Elliot Norton, Alex H. Jackson and J. L. McCord. The company is to engage as contractors, engineers, surveyors, etc.

**Domestic Alcohol Heat and Light Co.**, Wilmington, Del.; capital, \$300,000. Incorporators: Geo. G. Schroeder, Washington, D. C.; Chas. G. Guyer and M. R. Guyer, Wilmington, Del.

**Eclipse Electric Arc Light Co.**, New York, N. Y.; electrical work; capital, \$15,000. Incorporators: George H. Shuman, 1070 Madison ave.; Nathan C. Solomon, 522 West 150th st.; Robert E. Love, 325 West 93d st., all of New York.

**Hadly, Wright & Osgood**, New York, N. Y.; erect and install Ashley system of sewage purification and disposal plants; capital, \$25,000. Incorporators: Samuel H. Hadly, 941 Simpson st., New York; Bayard Wright, Haworth, N. J.; Dwight E. Osgood, 215 West 106th st., New York.